ARMY

MARCH 1957
50¢

S. L. A. MARSHALL

tells how Israel Blitzed the Sinai Peninsula in 100 Hours

Flying TV cameraman focuses on ground battle

ALSO

Long thrust missile weapons are making Artillery a primary arm

How the Roman Legions conquered in the first battle of Britain

Pennsylvania State University ROTC honor guard is formed by Company B, 5th Regiment, Pershing Rifles. All members of the PSU Pershing Rifles are members of AUSA

An assistant PMST tells us how and why the first ROTC student company of AUSA was organized

CATCH 'EM YOUNG

CAPTAIN

ROBERT M. DWINELL

IN his remarks at the Second Annual Meeting of the Association of the United States Army, General Willard G. Wyman, CONARC commander, emphasized the importance of three main groups of Association members: the active Army, retired personnel, and the select group of civilians interested in the Army's role in national security. Earlier in the morning an event took place that will have far-reaching effects on our army. This was the chartering of the first ROTC Student Company of AUSA.

The chartering ceremony opened a new era for the Association. It cleared the way for ROTC companies to take their place as the fourth essential element of AUSA. How can the formation of ROTC companies have far-reaching effects? And why should the present members support such companies?

Early in 1956 a group of ROTC cadets at Pennsylvania State University approached the Military Department with a request for the formation of a combat forces student society. The cadets felt that none of the student societies offered them all the things they were looking for. They were in the GMS Program and had a problem of vital interest to their future. They were leaving campus life and the collegiate atmosphere for the penetrating reality of a soldier's life. How could they find out about branches of the Army only touched on in class? How could they further their professional military education while on campus? They needed some student group that would generate answers and guidance.

The Military Department of Penn State bombarded AUSA for information and help on forming a student

(*Continued on page 77*)

Captain Robert M. Dwinell, *Armor,* was an enlisted man for six years before being commissioned. He served with the 4th Armored Division and 2d Cavalry Group in ETO during World War II and with the 1st Cavalry Division in Korea. A career officer, Captain Dwinell is assistant PMST at Pennsylvania State University where he was active in the formation of the first ROTC Company of AUSA, of which he is adviser.

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ARMY

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ARMY is a professional military magazine devoted to the dissemination of information and ideas relating to the military art and science representing the interests of the entire Army. *ARMY magazine strives to—*

Advance man's knowledge of warfare in the fields of strategy, tactics, logistics, operations, administration, weapons and weapons systems.

Advance man's knowledge and understanding of the soldier as an individual, as a member of a trained unit, and as a member of the whole Army; emphasizing leadership, esprit, loyalty, and a high sense of duty.

Disseminate knowledge of military history, especially articles that have application to current problems or foster tradition and create esprit.

Explain the important and vital role of the United States Army in the Nation's defense and show that the Army is alert to the challenges of new weapons, machines, and methods.

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—AUSA By Laws, Par. 13 Article II

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THE MONTH'S COVER

Sergeant James N. McFadden, Recon Troop, 101st Airborne Division, surrounded by TV equipment in the cockpit of a liaison aircraft, checks the unit monitor before a mission. To the right of his head is one of two TV cameras, the other is in the floor. This ultra-modern equipment brings the battle situation into the commander's CP from points up to sixty miles away. *(Army Signal Corps photo by SFC Cecil Robertson)*

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EYES LIKE A CAT...

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THE MONTH'S MAIL

We Must Think Ahead

● I think Captain Hogan is kidding only himself in his letter in the January issue. He criticizes some of the ideas in Colonel Rigg's November article about Futurarmy because of their alleged impracticability. True, none of these devices has been perfected so that they can be actually used, but Captain Hogan assumes that inadequacies in today's equipment will still appear in that of the future. I can imagine someone just before the Civil War writing that the telegraph will never be made simple enough to use at the tactical level. The assertion that humans have an extreme fear of height reminds me of a letter written just before the B&O Railroad was opened over a hundred years ago. The writer said the railroad would probably fail because human beings wouldn't submit themselves to the superhuman speed of 30 miles an hour.

Captain Hogan seems to be trying to say that it is foolish to try to think ahead because you may be wrong. Because hand-and-arm signals and the ground pounder were good enough for Dad they should be good enough for us. They're good right now, because they are all we have. But we mustn't criticize a man for using his imagination, for the next conflict may be decided by the genius of a few men who dared to use theirs.

LT. ARTHUR J. KOVER
163 Yale Station
New Haven, Conn.

U. S. Ammo

● The picture article on the Israeli-Egyptian conflict in the January issue contained some interesting photographs. Of particular interest was the picture with caption that read: "The ammunition in this dump was of Russian manufacture, according to the Israeli troops which captured it." The only shell visible in the photograph is clearly marked "155H, SHELL, M107, W/SUPPL CHG," which is certainly a U. S. nomenclature, printed in English.

Our 155 howitzer shells have normally been packed upright on a pallet-type pack

U. S. ammo?

since World War II. However, these shells appear to be packed one to a box, possibly a pre-World War II pack for this item. The nomenclature "M107" and "W/SUPPL CHG" indicates that the shell was manufactured during or after WWII, and therefore is probably not our packing but possibly some other country's improved pack.

If the markings on these boxes led the Israelis to believe that the shells were Russian manufactured, could it be possible that some of our Lend-Lease materials are now in Egypt?

CAPT. WARREN SNYDER
LT. JAMES E. WILLIAMS
Milan Arsenal
Milan, Tenn.

● *Captain Snyder and Lieutenant Williams have sharper eyes than the Editors who missed the markings on the shell. The error was probably made by the caption writer for the photo agency which furnished the photo. It is possible that some of the ammunition captured was of Russian manufacture.*

January Cover

● I would like to express my appreciation for printing the front and back photo cover of your January 1957 issue. It is an outstanding photograph of a parachute jump by members of the 77th Special Forces Group. Unfortunately and inaccurately you called it a jump by the "77th Special Service Forces." The [First] Special Service Force were para-ski troops composed of Canadians and Americans during World War. They were inactivated toward the close of the war. Though we honor their name and splendid record, we are anxious that the term Special Forces be used, as its connotation envisions an entirely new concept.

COL. NOEL A. MENARD
CO, 77 Sp Forces Gp Abn
Fort Bragg, N. C.

● *It was a slip of the typewriter. The editors of* ARMY *well know the difference between today's Special Forces and the First Special Service Force of World War II. Our apologize to all for the slip.*

Russia's Counter to SAC

● Lloyd H. Norman's excellent "The High Cost of Survival" [January], appraising the economic and strategic dangers of building an omnipotent Air Force, mentioned that one AF planner could foresee no need for an atomic-war army of more than 500,000 men to control hysterical mobs in the U. S., and later, after SAC destroys the USSR, to restore order there.

Among many fine rebuttals to similar shortsighted arguments was one by Brigadier General Russell W. Volckmann, presented in his book, *We Remained.*

Paraphrased, it is that the Russian Army's first move in an all-out war would probably be to occupy all or most of Europe. Then with the cities and factories of the USSR being hit by SAC, it seems likely that the Russian Army with its political organization and police-state heritage would be able to gear the economy of the countries of Europe to the maintenance of the Red war machine.

Would we then have the moral right to use maximum-destruction weapons on the cities of our allies?

Therefore, even in a general nuclear war, the decisive weapon may still be the

rifleman with his caliber .30 ballistic missile.

LT. ROBERT J. MCCAFFREE
Fort Sill, Okla.

Air Force's Army—rebuttal

● WO Conlon's letter in January's *ARMY* questioned the advisability of creating an airbase defense force within the Air Force and recommended that the USAF "look into some training for the ground pounders"—presumably the Air Force's nonflying personnel.

As author of the article in *Air Force* that indirectly prompted Mr. Conlon's letter, I assure him the article constitutes no attempt by the Air Force or the AF Association to establish an "air armored cavalry squadron." The recommendation was my personal suggestion that the editors of *Air Force* were kind enough to print.

If Mr. Conlon read the article carefully he might have found that it came not from some dark Air Force conspiracy to usurp yet another Army function, but from an officer of the 104th Armored Cavalry, Pennsylvania *Army* National Guard.

LT. WILLIAM V. KENNEDY
Camp Hill, Penna.

The letters that follow are a good sample of the vast number of comments we have received on Colonel A. S. Collins's "What Are We Doing to Our Commanders?" in our January issue. For reasons of space we have not been able to use all of the letters received and those we have used have been necessarily shortened.—THE EDITORS.

A Service to the Army

● Colonel Collins's article was the most refreshing, hard-hitting, honest item that I have seen in your magazine for many months. I can assure you that it is a much more positive approach to correcting what ails the Army than the publishing of the minutes or proceedings of recent meetings of the Association of the United States Army.

I am convinced that before any real progress will be made in the Army's position, the message which Colonel Collins conveyed must be communicated to and understood by the people who are making decisions and establishing policy for the Army. The problems discussed in the article are, to a great degree, the same ones which almost preclude the possibility of an officer obtaining genuine work satisfaction. This condition is malignant in nature, and therefore must be corrected before it saps the very strength from the Army.

Although I do not know Colonel Collins, I admire him for his public presentation of his personal views. Too many of his contemporaries are discussing these problems at coffee call and cocktail parties, but I notice few are exposing their views to public and official ears.

I wish to congratulate you for publishing his article; you have done a service to the Army.

MAJ. JOHN R. FLYNN
Fort Leavenworth, Kans.

Pinpoints the Trouble

● Thanks for publishing Colonel Collins's article.

If our commanders and staff officers heed it perhaps our company and battery officers will once more be able to really run their outfits. It pinpointed the most familiar complaints of junior officers that I heard during my tour with troops.

If all higher headquarters made a concerted effort to correct the faults cited by Colonel Collins, I am sure reenlistment rates would soar and resignations by junior officers would be few.

CAPT. THOMAS C. CLARY
Fort Benj. Harrison, Ind.

Worth the Price

● In my opinion, Colonel Collins's article is worth the price of subscription. I have had a cooling of my regard for *ARMY* since it changed from Combat Forces Journal, but more of this type of article, which highlights the problems of the Little Man at the End of the Line. This article renews my vow to recommend the magazine to all my junior officers. Keep it up!

LT. COL. CHARLES E. REMICK
Fort Bragg, N. C.

Alleviate the Burden

● Colonel Collins has evaluated the problem of unit commanders and set it down in writing in such a way as to express the feelings of everyone who has held a command in recent years. If this article will be taken to heart by Colonel Collins's "Great Unknowns," it would alleviate the burden that falls on the already overburdened shoulders of unit commanders. If he were within commuting distance of San Antonio, I would feel honored to shake his hand.

CAPT. ROBERT L. LUCAS
Fort Sam Houston, Texas

Give Him His Head

● If all senior officers were like Colonel Collins, I'm sure more of us would say "command was my most gratifying duty" instead of the usual "Boy, was I glad to be rid of that command"—and for the exact reasons given by Colonel Collins.

Things are improving, we are told, but in the next distribution is a new batch of "how" directives and "dos and don'ts." We are told that seniors do, or should, trust, have confidence in, and demand

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top performance of, their juniors. But for the most part the commander is tolerated and used as the fall guy at every level. Even the minutest details now come from top headquarters with little chance for deviation by even a corps or division commander, let alone a lowly company commander.

Here's an example. The loss of weapons in an army area seems outrageously high. So to make it "easy," army publishes a memorandum outlining in great detail exactly how to issue a weapon, and its day-to-day handling. If such a simple thing as that can't be done properly at company level, we only need to change company commanders.

Here's another. Division directs us to have supervised motor stables daily for one hour—thus implying that our drivers are untrained, unsupervised, and untrustworthy. Usually the people who put out the directives are the very ones who demand transportation during the "scheduled supervised period." A few years back I had one of the outstanding tactical motor pools in Fourth Army. We did not have scheduled motor stables and it took us only five days to train a new driver. It was simply a matter of trust and confidence, plus insistence on top performance. We produced because of the challenge. I enjoyed that tour.

The commander still has the responsibilities, but too often he isn't allowed to use his best tools to carry them out.

R. A. Company Commander
Fort Campbell, Ky.

Concern for Troops' Future

• My experiences have closely paralleled those of Colonel Collins, and I know the problems of which he speaks. They are real, and he has presented them extremely well. Whereas Colonel Collins probably fared better than I in his regimental assignment, my concern is still for the troops and their future. Under the conditions he enumerates, we will not develop unit pride and morale, which keep and attract good men.

Perhaps a recently published instructor's manual by CONARC on the preparation of efficiency reports reflects a serious contributing factor to one of the problems the author outlines. In it, a situation is presented where a supposedly efficient company commander and fine troop leader creates an impression in the mind of his battalion commander that he does not want a change in assignment. The document indicates quite pointedly that this officer lacks ambition. Isn't it a little dangerous for Colonel Collins's Regular officer not to actively promote his way out of the regiment? Has the West Point motto been changed to: "Duty, Honor, Country, and I"?

Col. William J. Himes
Pittsburgh 13, Penna.

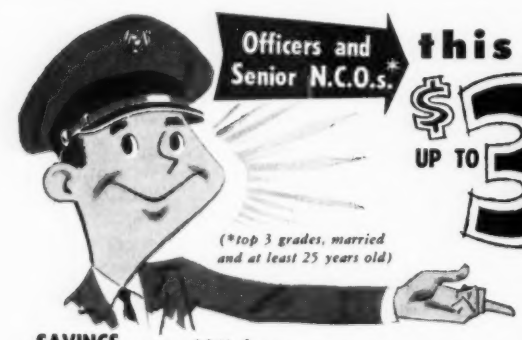
Perceptive and Sensitive

• Colonel Collins's perceptive and sensitive dissection of perhaps the Army's deepest problem is due serious consideration at the highest levels.

I say "perceptive" because I feel Colonel Collins has accurately defined the problem of keeping talented people in the Army by returning the intangibles of troop duty (and not a mention of money, mind you). I say sensitive because he touched on so many of the underlying causes.

Some of what he has described is symptom, some is cause. As a junior officer who has experienced such matters, I should like to add one further recommendation to his "Argue to the point of decision."

Make sure the tour of duty of all field-grade officers assigned to troops, whether in command or staff position is long enough for them to master their assignment. Rapid changes in command violate the major tenet of military organization. Give every commander a good, solid op-



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Additional Recommendations for Action

The following recommendations for corrective action were in the original manuscript of "What Are We Doing to Our Commanders?" but were deleted due to limitation of space.

CMI. A CMI would be much more meaningful to senior and subordinate commanders if a CMI team appeared on the scene some morning as a unit was falling out for training and announced that the training for that day would consist of a Command Maintenance Inspection. . . .

Statistics. Statistics are good indications, but let us be wary of the box scores, the percentages and the quotas. And let us all remember that there are only two things that soldiers can qualify in 100%—eating and sleeping.

Administration. The impact of administration at the company and battery level must be reviewed. . . . In the administration of justice, the steps that we take to protect a worthless troublemaker's best interest go far beyond that required in any democracy or gathering of free men. It borders on the ridiculous. An overall review is essential here. . . . We should do something to set the first sergeants apart from the other master sergeants in the company. Right now, they all get the same pay, but the first sergeant has far more responsibility than any of the others. . . . Many master sergeants, after taking a fling at the first sergeant's job, feel that it is not worth the extra time and effort they must put in. . . . This results in a constant turnover in first sergeants with consequent loss of stability. Immediate steps should be taken to raise the pay of first sergeants (also Battalion and Regimental Sergeant Majors) at least $50 and preferably $100 a month.

Training. One suggested solution is for D/A to prescribe a minimum training program from 0730 to 1230 hours with the afternoon devoted to miscellaneous tasks such as maintenance, clean up details, normal administration, athletics, and preparation for the next day's instruction. Some authorities may feel that we could not get by with deviating from the forty-four-hour training week. A shorter training period can be defended. If you get thirty solid hours of formal training a week, you will have the basis for turning out a combat ready soldier. In practice, under such a schedule, you actually work more than forty-four hours a week. The majority of the afternoon periods are devoted to constructive tasks. In addition, you have field exercises, night training, etc., and one actually puts in 50-60 hours a week.

Personnel. The majority of the good officers must not be filtered out at the top, thus depriving our troops of competent commanders. . . . The practice of salting staffs with layer upon layer of our better officers must stop. . . . We are blind when we do not see that the ones that are hurt by this practice are the juniors officers and the enlisted men, in short the mass of the Army, who do not get the leadership and guidance they deserve.

Those wearing the chevrons should be setting the example for the very fine soldiers we have in the Army for two years. Immediate action must be taken on this score and we must make it clear to all, both officers and NCO's, that higher standards must be set. Why we persist in carrying the dead wood I do not know. But we do and unfortunately most of it is at the unit level. Too many think of the impact of separation on the incompetent's family. Too few think of the impact, all bad, that this same incompetent has on hundreds of men.

COL. A. S. COLLINS, JR.

portunity to watch "his officers, his men, his unit, develop under his guidance."

LT. JOHN B. KEELEY

Princeton, N. J.

Wholehearted Endorsement

● I feel that many officers who have not had command experience at regimental or lower levels since 1945 very clearly lack an understanding and appreciation of how the commander's position has changed. . . .

While the Army has been doing a most outstanding and remarkable job in developing new weapons and devising new organizations to meet the challenges of the atomic battlefield, it has definitely lost ground in developing commanders at all levels—from noncommissioned up to regimental, and perhaps even divisional.

COL. JOHN F. RHOADES

Fort Leavenworth, Kans.

Difficult to Articulate

● The critical situation discussed by Colonel Collins has become institutionalized to such a degree that an examination of it should be made by responsible persons. Such a study should not be conducted in the manner of one made about two years ago in my unit by a member of a team analyzing reasons for disatisfactions of members of on-site AAA units. The inquirer came armed with a detailed questionnaire representing the preconceived notions of the team; moreover, the questions dealt with important but peripheral issues, were statistical in nature, and could have been answered by the battery clerk and returned to Washington by mail. The inspector had no time to hear the report that I, as battery CO, had spent many hours preparing in eager anticipation of the unique opportunity.

CAPT. R. G. GARD, JR.

Bedford, Mass.

Disagreement by Two Noncoms

● I am a noncommissioned officer and I disagree with Colonel Collins's analysis of "What has happened to the 'backbone' of the first-three-graders." It is unjust. True, a few of us drink too much and do not know our jobs as well as we should, but I am sure such men are a tiny minority. It is unfair to put the whole noncommissioned officer corps in this classification.

Colonel Collins wrote that a noncommissioned officer was usually given a ten-day restriction or a fine ranging from $25 to $50 for drunken driving. He should check Fort Campbell or Fort Jackson or Fort Benning, and he would find that the civilian authorities normally impose a fine ranging from $100 to $150, and when the noncommissioned officer gets back to camp he is court-martialed.

Noncommissioned officers have a right to complain of the lack of privilege, authority and responsibility. We would measure up to the highest standards if we were given the authority and the responsibility due us—plus the backing of our superiors.

I, and many of the noncommissioned officers I have been associated with, have always studied on our own time for self-improvement. Not only that, but we try to improve those with whom we serve. Most noncommissioned officers I know never miss an opportunity to attend a school or to study books and manuals. In our detachment there are five noncommissioned officers. Three of us are presently enrolled in extension courses; together we have attended a total of twenty service schools. Each belongs to a different branch, and is considered the average type of noncommissioned officer.

Colonel Collins says that AUS soldiers on two years' active duty have no desire to remain because they are not impressed with the knowledge and ability of at least 50 per cent of their noncommissioned officers; that they do not wish to remain subject to the orders of these incompetents. I wonder where Colonel Collins got his statistics. What per cent of the noncommissioned officers were unimpressed by the cooperation, ability and knowledge of the AUS men under them?

SFC GEORGE YANCEY

Barnesville, Ga.

● At first reading, Colonel Collins's article was outstanding. However, after reading it several times, I came to the conclusion that it is no more than a gripe, so to speak. The Colonel sets forth many things he found wrong in his regiment, but nowhere does he offer a solution or even recommend corrective action. [Read it again, Sergeant and also see box on this page—THE EDITORS.] In my opinion, most of the problems set forth could have been corrected by the Colonel himself.

Let's look at the qualification firing in Colonel Collins's regiment. He caught his subordinate commanders cheating al-

though he had set no specific quota for qualification. I'd be willing to wager that, aside from the embarrassment to the commanders, that was all there was to it. Truth is, there should have been on certain parts of their anatomy a bright, glowing red—and not from embarrassment. The whole outfit should have been packed off to the range on a weekend and requalified. I imagine the Colonel considered the latter but decided it would be a serious jolt to morale to take his officers and men from their families on a weekend for such an unimportant matter as getting his regiment combat-ready. I see nothing unreasonable or unfair in a regimental commander's demanding that his officers and noncommissioned officers do their jobs.

For me, the hardest part of Colonel Collins's article to swallow was his criticism of the Army's noncommissioned officers. I'll be first to agree that we are nowhere near minimum standards of efficiency, but I blame the commanders. Today's noncommissioned officer is like a spoiled child: he just doesn't get it laid on him by his commanders as he should have. No one blames the spoiled child; they blame his parents—and that is where the fault lies. The few good noncommissioned officers still around are like older brothers of the spoiled child. They were brought up right, but they can't help being resentful of the things that kid brother gets away with.

It seems to me that if a regimental commander knew most of his noncommissioned officers were inefficient, he should take steps to bring them up to standard. Those who can't produce should then be reduced.

Any regimental commander can test his noncommissioned officers and get rid of the deadwood by giving them an MOS proficiency test and a NCO general proficiency test. The first would test the noncommissioned officer's knowledge and capabilities for his job; the second his knowledge and capabilities in subjects all noncommissioned officers should know. Passing grade should be high, and those failing should be given additional training—on their own time—by picked instructors from the regiment. Those that fail miserably the first time should be reduced. Those given additional training should be retested.

This system is brutal, but it would remold the entire regiment's noncommissioned officers in a few months. There would be less tippling and a hell of a lot more studying. And as I said before, it would rid us of the incompetents. If the Army is full of deadwood let's get rid of it and quit being so softhearted.

Sometimes it seems that the emphasis is not so much on a noncommissioned officer's military ability as on his off-duty conduct and/or marital status. Many commanders allow the noncommissioned officer's marital status to influence their decisions on promotion or reduction. I believe, contrary to popular opinion, that the best noncommissioned officers are the unmarried ones. They may get into more trouble off duty than the married men, but they do a better job on duty. Also, I don't think the trouble they get into costs the Army as many man-hours as the endless procession of trips to the hospital, the commissary, and the kid's school that married men make during duty hours.

At one point Colonel Collins wrote that there were many splendid young two-year officers who "seldom see the type commander, at the field-grade level, that will inspire them to emulate him and follow an Army career." I guess we noncommissioned officers aren't alone, at that.

If you use this letter, I would like my name used.

MSgt O. G. Hibbert
Co M, 18th Inf
Fort Riley, Kan.

● *The editors submitted the letters by Sergeant Yancey and Sergeant Hibbert to Colonel Collins with a suggestion that he might want to comment on them. His answer follows:*

Though one would think from a reading of Sergeant Hibbert's letter that there is wide divergence in our views, I feel the gap is not so wide as it appears. Unfortunately, he missed the point I was trying to get across, but more on that later.

Reference specific comments in Sergeant Hibbert's letter: "Nowhere does he offer a solution or even recommend corrective action." Solutions and corrective action were included in the original manuscript but in the publication some were deleted, evidently due to space limitation.

"Most of the problems could have been corrected by the Colonel himself." They were. Space precludes and, more important, little is to be gained by trying to explain or defend the corrective action taken—that was not the purpose of my article. Suffice it to say action was taken to educate, guide, and correct the officers and men under my command to the best of my ability. I would just emphasize that something was done about many of the problems confronting my outfit.

Sergeant Hibbert speaks of a test for NCO's. He outlines a good program. However, it should not be a regimental test. It should be an Army-wide test. The Air Force and the Navy have proficiency tests for promotion and there is no reason

(Continued on Page 68)

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THE ARMY'S MONTH

Army Riflemen Aim at Perry

To increase the skill of Army shooters in 1957 CONARC will operate small-arms firing schools in each army area during the two weeks preceding the area's rifle and pistol matches. New shooters will be encouraged to participate by the requirement that half of any team's members competing in post, divisional, army area or all-Army matches must have never before entered matches on that level. A better balance of competition will result because under the new system of classification, shooters will be rated Master, Expert, Sharpshooter or Marksmanship for each match, and compete against men of a like rating. A central file will keep track of the Army's top marksmen. Major commands keep records on each shooter, filing one copy and forwarding the second to the U. S. Army Advanced Marksmanship School at Benning.

CONARC's Infantry Section, which supervises marksmanship, points out that these steps are in line with the Army's multipronged program to develop new shooters, provide more training time, allow them to compete for awards against men of equal skill, and to have in a single place information on shooters regardless of their station.

Another prod to more and better Army marksmen will be the establishment of small-arms firing schools, staffed by graduates of AMS, in each army area.

Correction of Grades

Methods of correcting injustices or discrepancies that have occurred in some instances in the conversion and appointment of NCOs and specialists are announced in Circular 611-27, effective 30 April.

The aim of the NCO/Specialist program was to separate NCOs from specialists, to enhance the noncommissioned officer's prestige, and to preserve the respect due specialists. In some cases, however, conversions to specialist grades as of 1 July 1955 were made with no opportunity being offered to request retention of NCO status as provided for by the regulations. Some soldiers were converted or appointed to NCO or specialist grades higher than those authorized for their primary MOS.

Circular 611-27 prescribes a one-time Army-wide verification or adjustment of NCO/Specialist status. Records of specialists converted as of 1 July 1955 will be screened for statements signed by them accepting specialist designation. Classification boards will determine proper grade and Primary MOS for those restored.

Louisiana Maneuvers—1957

Elements of five divisions, comprising more than 20,000 troops from posts throughout CONUS, will engage in Exercise King Cole, 27 March to 16 April. The exercise will be held in Louisiana, the site of Sage Brush of 1955. King Cole, a CPX, will be followed in April and May by Sledge Hammer, a field exercise.

King Cole will train commanders and staffs in tactical, intelligence and logistical operations under simulated conditions of extensive CBR and electronic warfare. Special-weapons units and others participating at operational strength will get realistic field training. Organization, doctrine, techniques or procedures as they relate to Futurarmy operations will be tested by troop units, as well as other training objectives laid down by CONARC. The 2d Logistical Command will be the maneuver support unit for the exercise.

Lt. Gen. J. H. Collier, Commander of U. S. Fourth Army, will serve as director of both stages.

King Cole participants will include the headquarters staffs of the XVIII Airborne Corps, 1st Armored Division, 1st and 3d Infantry Divisions, 82d and 101st Airborne Divisions, 2d Armored Cavalry Regiment, and field artillery units including the 280mm cannon, eight-inch howitzer, Honest John rocket, and Corporal guided missile.

Captain John B. Foster, Commanding Officer, Battery D, 5th FA Battalion, places a wreath on the grave of Alexander Hamilton, his battery's first commander, during the Hamilton Bicentennial observance in New York City. Battery D was flown from Fort Riley to New York to participate in the observance.

Atomic Training

Fifth Army recently conducted the first Atomic Special Weapons Instruction Class for thirty-two officers of the National Guard and Army Reserve from various units in its thirteen-state area. The course was held at Fort Sheridan. Instructional material came from Leavenworth for 87 hours of classes. Instruction covered the technical aspects of tactical atomic weapons used by the Army, and familiarization with air and naval special atomic weapons. Nine officers from Fifth Army headquarters were instructors. Fifth Army plans to continue these classes at Fort Sheridan.

"Mission of the Army" Film

A new film, "The Mission of the United States Army," is available from Signal Corps Film and Equipment Exchanges. This movie is a panel discussion between General Taylor and students of the Armed Forces Staff College, in which the Chief of Staff, in an in-

formal and objective manner, discusses current Army thinking and policy, and its mission and functions in the national defense.

The film is of interest to officer groups or for general showing. Use by civilian groups which charge no admission is authorized.

USAR Divisions Get L-19s

In the next fiscal year Department of the Army will issue up to three L-19 aircraft to each of the ten USAR combat divisions which have the means for receiving, operating and maintaining them. The idea is that USAR aviators will be flying the same type of plane they use during summer training periods. Reserve commanders and staff officers, and active Army advisors, will be better able to supervise the training of units scattered over wide areas.

All USAR aviators, regardless of unit assignment, will have a chance to fly these planes. There will be exceptions, of course, and civilian contract flight training will have to continue in some areas.

Benning Reflects ROCID

Changes are being introduced in United States Army Infantry School instruction to reflect ROCID organization. When complete Army conversion to the ROCID organization is implemented, there will be no infantry battalion in the infantry division and programs of instruction will then contain battalion-level instruction for the armored-infantry battalion, tank battalion and reconnaissance battalion.

General Officer Shifts

Lt. Gen. Robert M. Montague, to CinC, Caribbean Command . . . **Maj. Gen. John J. Binns,** to Sixth Army . . . **Maj. Gen. Robert G. Butler,** to USAREUR . . . **Maj. Gen. James F. Collins,** to ODCSPERS . . . **Maj. Gen. Robert L. Howze, Jr.,** to Sixth Army . . . **Maj. Gen. Howard Ker,** to USAREUR . . . **Maj. Gen. Henry R. McKenzie,** to Executive Director for Subsistence, DOD . . . **Maj. Gen. C. Rodney Smith,** to Deputy Chief of Engineers . . . **Brig. Gen. Roy E. Lindquist,** to 3d Infantry Division . . . **Brig. Gen. Charles H. McNutt,** to USA Engineer Center . . . **Brig. Gen. John L. Person,** to Assistant Chief of Engineers . . . **Brig. Gen. John F. Ruggles,** to USA Infantry Center.

Retirements

Lt. Gen. Ralph J. Canine . . . Lt. Gen. William K. Harrison, Jr. . . . Lt. Gen. Walter L. Weible . . . Maj. Gen. George E. Lynch . . . Maj. Gen. John C. MacDonald . . . Brig. Gen. William E. Barksdale.

LaCrosse the Army's latest SSM takes off at White Sands Proving Grounds. See page 71 for more about this missile.

In the ROCID organization, the rifle company is a large unit possessing greater combat power and increased capabilities. Additional instruction at company level will be required. Also, in ROCID organizations, increased instruction must be presented in the duties and responsibilities of the regimental commander and his staff officers. Current concepts envision greater dispersion between regiments and more frequent regimental operations of an independent and semi-independent nature. Reduction of battalion-level instruction in the current program effects an increase in company-level instruction. The new doctrine recognizes need for instruction in the employment of the brigade to familiarize the advanced-level student with:

(1) Responsibilities of the regimental staff officer when the regiment is functioning as a part of the brigade.

(2) Differences encountered when the regiment functions directly under division.

(3) Differences encountered when the regiment functions tactically under the brigade and logistically under the division.

Signal Corps Opportunities

The Army Signal Corps has a great number of vacancies in the electronics field in the top three grades. Applications for training may be sent through channels to the Chief Signal Officer. Among the vacancies are these:

Microwave radio equipment repair: 932 vacancies, course of 30 weeks.

Radar repair: 673 vacancies, course of 33 weeks.

Carrier equipment repair: 1,732 vacancies, course of 25 weeks.

Field radio repair: 1,200 vacancies, course of 25 weeks.

The Signal Corps will also train eligible applicants as TV cameramen, meteorological technicians, and air traffic controllers.

(Continued on Page 68)

How Much Is a Horseshoer Worth?

FARRIERS used to draw a pay differential because the demand for horseshoers was as great outside the service as within. (Possibly they may do so again, since horseshoeing seems to be a dying trade and those seventeen horses the Army is going to keep at Fort Myer after all will have to be shod regularly.) And as with farriers, so with other skills at other times. When General Pershing went into Mexico his motor vehicles were driven by civilians under contract, since operators of motor vehicles were scarce in those days. A few years later soldiers began to operate military vehicles, but coincident with this was the tremendous civilian switch-over from horse-drawn to motor-powered vehicles, and skilled drivers were in demand. For a time the Army was a driver-training school for civilian motor-vehicle fleet operators. So too in the early days of radio. Army-trained radio operators were courted by civilian firms with pay offers that the Army couldn't meet.

Thus there is nothing new or radical in the present idea that "hard" skills (meaning scarce) should get more pay than "soft" skills (meaning a surplus).

But this is not all there is to military pay scales. If it was entirely a matter of supply and demand, the problem would be relatively simple. But military men do not live by pay check alone and there are other tangibles and intangibles that make the task of revising the military pay system a problem of staggering proportions.

Consider the varied number of jobs and skills required just by the Army; then add the additional jobs peculiar to the Navy and the Air Force. Make adjustments for those skills that are dying and those that are new and booming. Put all this together and try to prepare salary scales that will assure the Government the skills it requires and at the same time be attractive and equable to each de-

serving individual. Then try to write it into law that will be interpreted alike by lawyers, comptrollers, colonels and company clerks.

The Cordiner Committee—named for its Chairman, Mr. Ralph J. Cordiner, President of the General Electric Company—attempted most of this, and its report and recommendations are to be considered by Congress. As everyone in the service must know by this time, the Cordiner Committee abandoned longevity pay in favor of pay supplementals, proficiency raises, in-grade pay boosts and a revision of the enlisted grade structure by adding two additional grades. Proposed pay tables for officers and enlisted men appear on page 72.

It is impossible within the bounds of space limitations to analyze all the proposals, and to do so less than exhaustively would be a disservice.

It can and should be said, though, that the Cordiner Committee's objective was not to provide an across-the-board pay increase, but to revamp the pay structure so as to assure the Government full return on its investment in military brains and skills by attracting and holding the best men available. This does not mean that the average or slightly better than average man will be penalized in any sense. It does mean that the mediocre will not be encouraged to make the military a career. Indeed, the Committee recommended that the Services strengthen their procedures for eliminating unfit and non-productive individuals.

When talk of special pay for special skills was first heard there was some fear expressed that combat leaders—the squad and platoon leaders who take and hold the ground, the leaders of those small bands that stand between the enemy and the rest of us—would be the forgotten men. Indeed, if leadership is ever to be considered a "soft" rather than a "hard" skill, we will be well on the road to defeat and the end of our existence as a free nation. Leadership is a most difficult quality to isolate and analyze, especially combat leadership. It is to the Army's credit that it places the highest possible value on it and is doing more research than any other service in attempting to separate in advance the leaders from the non-leaders. Leadership is such a nebulous, yet all-important, thing that the placing of any kind of price tag on it is almost presumptuous. We are assured that the Cordiner Committee recognized this and its report holds that military leadership as well as fighting skills is as essential as those skills that are advertised so heavily in the want-ad sections of the newspapers.

H-HOUR

A mechanized column strikes eastward. The battle began with a parachute attack deep in the Sinai

THE 100-HOUR WAR

BRIGADIER GENERAL S. L. A. MARSHALL

The limit of advance of this column of Israeli tanks was about ten miles from the Suez Canal

SINCE returning from the Sinai Peninsula, where I spent five weeks studying the "100-Hour War" of last October, I have often been asked: "How could it happen?" "How did the Israelis do it?"

They did it by extending the limits of military daring. Israel's hitting forces traveled farther over more formidable country in less time than any combat body in history. They won the decision in three days. By the fourth day they were mopping up 200 miles beyond their assembly points.

This alone is a feat at which to marvel. A fortified area half the size of Nevada and more repellent than the harshest wastes in that state was conquered by men fighting as they moved at the rate of an unopposed motor caravan.

Motorization and tracks made possible these record marks in military mobility. Without tanks, without half-tracks, Israel's army could not have started. But there is no bright new magic in that. The U. S. Army, which has had such vehicles for twenty and more years, has not assured itself such sustained velocity.

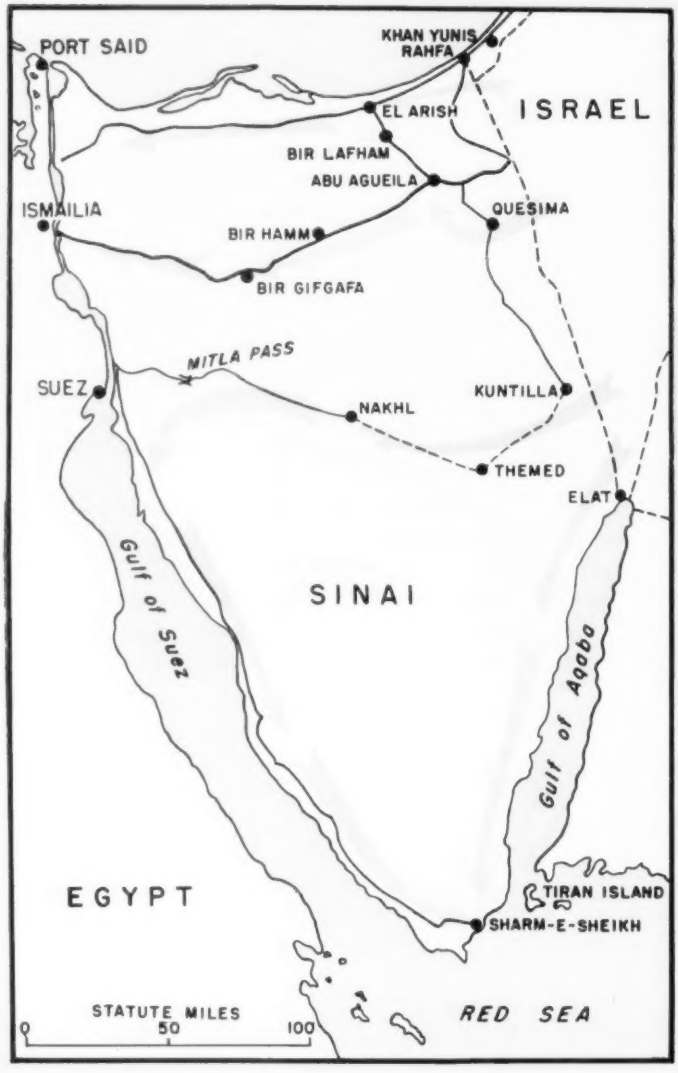
What made the difference? Certainly not professional zeal and efficiency, for Israel's army is not "professional" in the way we use that term. The campaign was not aided by any new secret making possible a more adequate supply in the fighting zone. Israel's ranks are not particular wizards at motor maintenance and battlefield repair.

To the contrary. The Israeli staff professes an ignorance of "logistics." Movement is regulated by sending the combat force at the decisive object and then ordering the supply people to keep up. Within the system there is relatively little schooling on the problems of field maintenance. In battle the fighters do most of the repair. They explain: "Many of us are farmers. We learn the knack on tractors."

Briefly then, Israel's army is a fighting body in spirit and not a balanced aggregation of highly trained specialists. In a frontier sort of way, it looks the part. Its men are clean but

BATTLE MOBILITY

Following the parachute drop on Mitla Pass there was a twenty-four-hour lull, then six Israeli brigades went into action. In 100 hours they overran Sinai, engaged in two main battles and fought two other sharp actions. One brigade commander whirled his command halftracks over 920 miles of desert in four days



not kempt. On duty they may go unshaven. The sentry walking post may go hatless and with his shirttail out, munching an orange. Men salute—occasionally. Formality is minimized. Men speak of higher commanders by their first names.

There is no polish in the Israeli Army but plenty of spit—applied to the hands.

'Good hand with a Plow'

These deviations from traditional military practice seem perfectly suited to the temper and liking of a force which is more civilian than soldier. Except for warrant officers and master sergeants, there are practically no lifetime, dedicated careerists within it. What is called the "regular army" is simply that body of inductees which happens to be doing its two and a half years at the time. Officers sign a contract for one, two, or maybe five years. They may separate at the end of the tour, or sign on again if their service is meritorious. All have other callings. The Chief of Staff, Major General Moshe Dayan, is a farmer and "a good hand with a plow."

This army, composed mainly of men who had to spring from the plow or rush from the office—and this includes its higher commanders—was given only three days to form and move on Sinai. In that time its reservists had to assemble, equip, deploy and get such limbering-up training en route as the hours permitted. Brigade and battalion commanders were read into the plan in the last twenty-four hours. Their own parts, except for sectors, and in some cases main objectives, were not preassigned. They still had to shape their attack plans and issue their orders.

More movement than fire

On still another count, as to infantry-armor action, the campaign was unique. They were ordered to keep enemy losses at a minimum and not bag prisoners if it could be avoided. All efforts were to be directed toward squeezing out and destroying opposing fortifications. This stricture, imposed because it suited both the political nature of the fighting problem and the moral standard of Israeli troops, made an utmost requirement on movement, while lessening the normal accent on fire. It would work if communications held up most of the time and if the Egyptians, with their advantages of owning the high ground where they were relatively

safe under deep earth cover fronting flat fields of fire, were not overly resolute. Both calculations proved accurate. Communications broke down not infrequently, and usually, as is to be expected, at the highest pitch of the local fire fight. The Egyptians broke down more frequently, giving way time and again in these same minutes of heaviest pressure.

SOP: When confused, attack

It happened that way because the Israeli Army fights that way. When the attack becomes disjointed, when radios are muted by fire and lower commands are out of contact, Israeli formations nearest the enemy invariably follow their SOP. They close upon the enemy sharply and decisively.

That is the great lesson of the campaign when put under the microscope. The phenomenal mobility of the Israeli Army isn't generated out of machine power but out of the unanimous acceptance and embracement of a battle doctrine which of its essence becomes unifying in the hour of greatest danger. Gideon's band probably held to the same simple rules. There is not one new idea in the doctrine. The startling tactical pace of the Israeli Army comes of applying sedulously those methods and precepts which all armies tell their infantry and armor will best maintain unity in battle.

It's a short list.

¶ Leading means moving to the point of main danger if decisive pressure is to be maintained. There is no excuse for holding back.

¶ When orders can't get through, assume what the orders would be.

¶ When in doubt, hit out. The short route to safety is the road to the enemy hill.

¶ Don't attack head-on; there is usually a better way.

¶ When troops are truly exhausted, hold back and rest them.

¶ Waste no energy in useless movement. Maintain the pace of the attack so long as physical resources seem sufficient.

¶ If the force designated to attack is not suitably armed to overrun the position, pull off and call for what is needed. Avoid useless wastage.

¶ Don't delay the battle because of supply shortages which lie beyond its probable crisis.

¶ Keep your sense of humor if you would save your wits.

¶ When trapped by sudden fire, movement means salvation more surely than a foxhole.

Israel's six brigades, which attacked toward Suez, overran Sinai in four days, engaged in two main battles, fought two other sharp and casualty-laden actions and wore through more than a score of moderate-to-heavy skirmishes, without violating any of these ten combat commandments. There was a seventh brigade but it was committed at Bir Lafham, too late to fight. There were also separate battalions which were used for such tasks as ingathering Gaza and reinforcing the brigades after they had absorbed the main shock.

Brigade means regiment (light)

By Israeli count, a brigade is not heavyweight. Brigade in Israel means regiment. The brigade of armor musters one battalion of medium tanks (modernized Shermans), one of light tanks (French AMXs), one of lorried infantry and organic complements of signals, pioneers, medical and headquarters units. The commander may use his battalions separately or split them three ways to form composite teams, as he likes it, or the target would seem to require. The infantry brigade is not radically different from the U. S. infantry regiment in manpower, though possessing vastly fewer organic heavy weapons.

An army without polish, but with lots of spit—on its hands

One artillery battalion (25-pounders) is usually in direct support of one brigade during battle. If two brigades operate jointly in the attack, another battalion may be on call from higher command. For the average company assault against a fortified position, the covering fire will be provided by one battery. Israel's army is parsimonious with artillery shell. It is short of what we consider essentials—rounds such as smoke and flares. These played little or no part in the Sinai battle and the effects of Israeli HE, fired by conventional batteries against the Egyptian heavy works, were marginal. The main

positions were not knocked down, or their guns destroyed, either by barrage or by air strafing. With rare exceptions, they went out of action when foot soldiers and armor moving together overran the surrounding works.

The broad design for the campaign was all-inclusive. That is to say that by its end, within less than one week, the Israeli brigades were to stand unchallenged over the whole of Sinai, with every enemy position taken and all resistance ended.

Egypt's army east of the Canal was formed of the 8th Division minus in the Gaza-Rahfa area and the 3d Division deployed between El Arish and Abu Agueila. Westward of Abu Agueila, between Bir Hamm and Bir Gifgafa, was one brigade of armor. Spread over less strong points was the Light Mobile Frontier Force, equipped mainly with armored jeeps and troop carriers. Egyptian conscripts are drawn mainly from the *fellaheen* or farm laborers. The *fellah* is illiterate, not interested in fighting, and so subject to privation that he is not really fighting material.

But at least these forces had numbers, solid earth and concrete protection, favorable defensive ground and sufficient modern arms to annihilate infantry and perforate medium armor. They were to be uprooted, and not merely routed but cleared away so that the Sinai would come clean of them between Sabbaths. It was quite an order. Their armored ridges were engineered for all-around defense, enclosed by broad belts of wire and minefields.

Of the considerations already described came the over-all plan. The first move was to be the dropping of a paratroop battalion at the Mitla Pass east of Suez, followed by reinforcement of the drop by the rest of the paratroop brigade advancing across country. It would attack through Kuntilla, which is just across the Sinai border from the southern Negev, and after overrunning the fortified posts of Themed and Nakhl, would proceed to the link-up.

For twenty-four hours after the drop, there would be a pause by all forces except the paratroop column crossing the south desert. Israel hoped to keep Egypt and the world guessing by that wait.

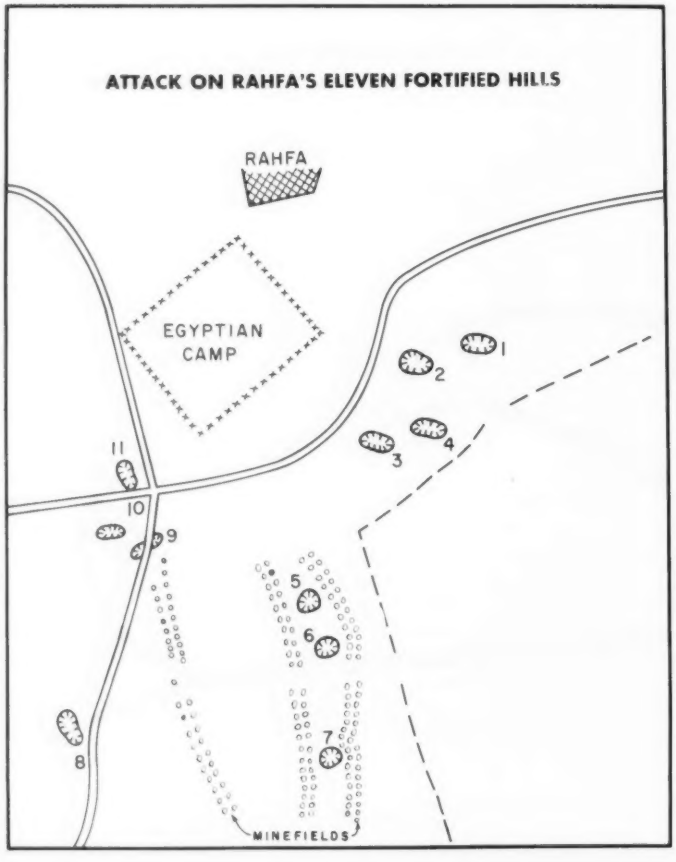
To provide a covering shoulder for this first maneuver, other forces would then cross the frontier in the central sector and capture the key road juncture at Quesima. From there, an infantry brigade, or armor if needed, could be sent south to reinforce, if the Mitla strike drew an Egyptian counter from Bir Gifgafa in the north or from Suez to the west.

Next: the Vital Triangle

When the 24-hour wait ended, the decision would be made at top level whether to commit additional brigades for the capture of the central fortified belt and of the armed northern coastal strip of Sinai, which included Gaza, Rahfa, Khan Yunis and El Arish, or call the campaign off because it looked unprofitable.

If full-scale attack became the order, a vital triangle of defenses in northeast Sinai would be the main target. Its points were the coastal town of Rahfa, the desert village of Abu Agueila and the city of El Arish. At all three the main road was covered by protective works in depth and the flanking dunes made defiles of the thoroughfares. Within the triangle were slightly less than two divisions which could quickly be reinforced by two brigades, and possibly four.

The battle went as planned, or hoped, or maybe better. The southern paratroop column completed its fighting march unaided. The brigade which took Quesima effectively, moved on against Abu Agueila and in a three-day battle battered and aborted that broad hedgehog spread over three fortified ridges. Thereafter it took on the armor at Bir Gifgafa and ran the survivors across Suez. The two brigades—one infantry, one armor—which captured the eleven fortified sandhills and ridges south of Rahfa, thereafter forked. The armor took El Arish and at last halted just east of the Canal. The infantry helped mop up the Gaza Strip. On these three axes, not one of the columns lost momentum or stayed the attack for more than two hours at any time, save to sleep the men briefly, or to await supply when gasoline and ammunition were spent. And this hap-



pened not once but several times.

Detailed description of the campaign, as to how attack was pressed and defense conducted, the special problems arising from the hard nature of the terrain and how individual men met the fire test, must await another day. Time and space do not permit it here. For a story which must run fifty thousand words, the task of compression would be too great.

Column lost, advance attacks

Some of the entries are startling. The paratroop brigade commander on the southern run lost his column in the first lap of the march after he crossed the frontier. The desert sand was much too heavy. It threw the tracks of the vehicles towing the artillery and carrying the infantry.

He was forward with the advance guard. Not being sure at first what had happened, he carried on, attacking and taking the fortified villages of Kuntilla and Themed with his advance guard. Meanwhile people with the beached brigade were pulling vehicles out of the sand by the grace of one overworked bulldozer. When at last he got word of the stripping, he called for an air drop of spare tracks and gasoline to the stalled column. Still, he kept going. By the hour he drew near Nakhl, two artillery pieces had caught up. This was the providentially delivered fire support for the sunset attack by the advance guard upon Nakhl.

It was chance-taking and unorthodox, almost unbelievably so. There are many incidents of this kind illuminating the limitless horizons opening to men who approach battle tasks with an oversupply of courage, irrespective of what else is short. And that, for the present, is the lesson of Sinai which is most deserving of clear statement. The campaign was won in a whirl by such incredibly small forces that it is a miracle they were not beaten by space alone. They did it on nerve more than with fire and deception. Thus thrice armed they proved worthy of any company. When things went worst, they looked their boldest. It does not cheapen their performance that the resistance was spotty. Full courage is not a relative thing.

There were individual exceptions. Here and there a leader hesitated or hedged, either trying to command from too far back, or bending his ear more to the beat of danger than to the call of tactical opportunity. When detected,

Commanders led as well as commanded—and at great cost in leader casualties

Israeli SOP called for more movement than fire, but when fire was needed they usually had all they needed

he was relieved. No excuses tolerated. No explanations asked.

Squad, platoon and company leaders go first when against fire. Should the attack even temporarily stall because of strong resistance, or become unhinged from severed communications, battalion and brigade commanders go posthaste to the center of action and restore movement. If there are two points of disarrangement, the second in command also goes forward.

'Follow me' is SOP

In the Sinai campaign these personal-risk missions seldom recatalyzed the attack. The reason is that the people lower down had already acted strongly to restore movement. It is a good question: Would they take hold as vigorously unless they knew that Big Brother would soon be there?

Measured in bodies only, the cost of this doctrine comes high. Of Israeli soldiers killed in the Sinai war (less than 200) half were leaders. Israel's army believes that this ratio of expendability among its best-qualified fighters is more to be honored than mourned. The staff says: "That kind of leading, exemplified at all levels, will inspire more men to become leaders."

At least the data on the Sinai campaign sustain that view. Yes, it was mobile in the extreme, made so in part by the linking of adroit movement with extraordinary economy of fire. But more impressive still is its showing that in the fighting individual, unusual endurance seems ever the by-product of sustained boldness.

The paratroop commander who temporarily stranded his brigade in the south Sinai desert kept moving seventy-two hours during which he fought three actions with no sleep for himself and only two hours' rest for troops. Yet he is a roly-poly with a weight problem which could probably bar him from jumping with U. S. forces.

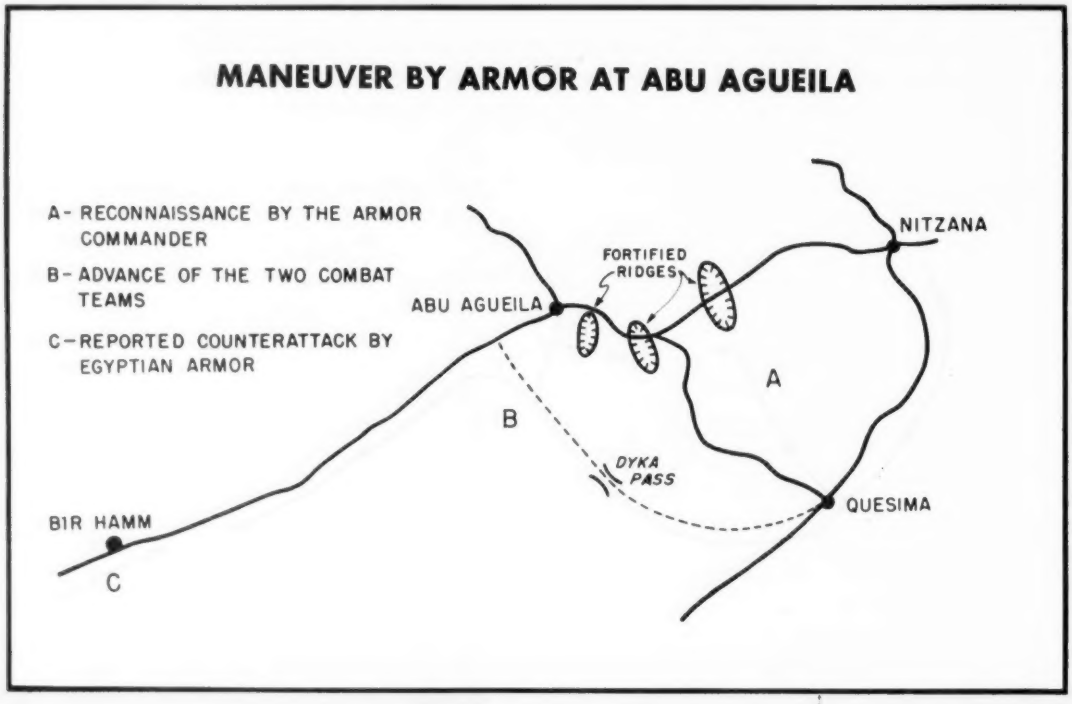
Commander on the go

On the central axis, the brigade commander put his command halftracks over 920 miles of desert road and trail in four days so that he could be with whichever of his three armored combat teams was hitting or setting up a new block. During the same time his three teams averaged 330 miles, one team moving almost exclusively over unroaded country but still going farther than the two which traveled mostly on hard surface. In their several engagements the three teams had thirteen vehicles knocked out. Forty-eight hours after the fighting ceased, all vehicles were again roadworthy. But the command had been given twenty-four hours of absolute rest..

Whereas personal intrepidity and physical fitness made the decisive pace of the battle, at the same time the Israeli army seemed to be acutely sensitive to the limits of its human material. There is one shining example from the attack on Quesima, which maneuver had been scheduled as the signal opening the general battle. The position was supposed to be taken by dawn. But the attacking brigade was formed wholly of reservists. The twelve-mile approach march through loose sand beat them down. Accordingly, at the request of the commander, with approval from the top, the assault was postponed four hours while the men slept.

Machine power is circumscribed

Experts writing about the military power balance in the Middle East not infrequently stress the great superiority of Israel to its neighbors in the count of fighting machines. That is an over-



simplification which ignores the controlling fact that whether one may apply more power or less at the decisive point is according to the radius of operations. There are ever roads to be blocked, patrols to be made and mopping-up tasks to be completed lest flanks become exposed and the rear overrun.

Outnumbered 2-1, tanks attack

In Sinai, the Israeli army's advantage in fighting machines and weapons was reduced almost to vanishing point by the distances over which forces hit. Rarely during the campaign was it able to bring heavier gunpower to bear on the decision point. The opening maneuvers provide the general exception, and in these the terrain was the main enemy.

Getting word that the Egyptians had concentrated seventy T-34s at Bir Gifgafa, the Israeli commander on the central axis counted his own tanks up to thirty-four, including twelve AMXs, and decided it was time to attack. Still earlier, this same commander had sent one small team of light and medium tanks down the Bir Gifgafa *wadi* to stop an Egyptian armored brigade which was attacking up the *wadi* in a half-hearted attempt to bluff back the Israeli armor brigade which was squeezing out Abu Agueila. The Egyptian commander radioed for reinforcement and started backing away before the two forces could engage with fire.

Such incidents characterized the general battle. There were numerous skirmishes and bloodless confrontations in the Hundred-Hour War. The most brutal fight was staged in the Mitla Pass by the paratroop brigade. There, two Israeli battalions, motorized, became trapped in an ambush with fire beating down on them from both sides of the road. The enemy positions were in caves lining the walls of the cliffs above. This surprise was almost identical with what happened to the U. S. 2d Division on 30 November 1950 south of Kunuri, Korea. The two Israeli battalions tried to attack upward in midafternoon. The cliffs were only two hundred feet apart and the climbers were beaten back by the crossfire. So sheer was the face of the rock that to hold on, they could not fire. Israel has said little about this fight because of its hard losses. In the end, the paratroopers gained the pass by sending riflemen against the caves after dark fell. It was won with clubbed rifles, boulders and fists.

Even so, Mitla Pass was a sideshow, as was the fight at Sharm-E-Sheikh at the south tip of the peninsula, staged so that Tiran Island, blocking the mouth of the Gulf of Aqaba, could be freed. Egyptian defense of Sinai was reeling when the Mitla action occurred. It had collapsed before Sharm-E-Sheikh was fought.

"Safety lies forward"—so when in doubt they attacked, when fired upon they moved on the enemy

Two decisive battles

Two battles decided the war. The one at Rahfa on the north coast was a sharp, fire-filled engagement which started at 0340 and ended at 0800. By that hour, the attack had overrun the eleven fortified hills south of Rahfa, enveloped the Egyptian forces in Gaza and opened the road to El Arish. Its main column on the left was almost stopped by a surprise minefield beyond the two which had been detected and breached.

The lead tank was knocked out, followed by a command halftrack, followed by a second tank, followed by a personnel carrier. Four mines, four wrecked vehicles, right together, and the extent of the field still unknown. This battalion had seven miles of sand to cross and two hours in which to do it, if it was to capture the fortified hills before dawn. There was no time to dismount and advance afoot, and too little time to probe the field, a technique unfamiliar to the Israeli army at the time.

So the battalion commander put his own halftrack directly around the right side of the four wrecked cars. The gamble paid off. The halftrack kept going. There was no explosion. The battalion followed.

Abu Agueila was the other half of the one-two punch which took Sinai. There the fighting was spread over three days. The Israelis could get forward barely enough armor—two battalions of mixed light and medium tanks and lorried infantry—to block the road to the westward and keep the Egyptians from being reinforced. They used one team to whittle away at the enemy rear after capturing the village of Abu Agueila; two of the three fortified ridges east of the settlement were taken

The watchword for all was "Go"

by storm in that way. The Egyptians quit before forces could be regrouped to attack the main ridge.

In view of the tactical facts, President Nasser's claim that at Abu Agueila the Israeli army met its match, is, to express it gently, somewhat airy.

Two-hour recon under fire

Both at Rahfa and Abu Agueila, Israel's tanks and rifle line had to attack in the open over flat ground. In the Rahfa fight, the Israeli deployment on the right was spotted and held in the glare of two searchlights. Suddenly it was nakedly exposed, and then it was barraged. Losses were heavy. These lights were never knocked out of action. Still, the attack moved forward.

In the Abu Agueila fight, the Israeli brigade colonel moved his own halftrack to within eight hundred yards of the big ridge and stayed there for two hours with the Egyptian artillery coming down on him. It was this personal reconnaissance that convinced him the enemy had too many heavy guns for a direct assault by one mixed armor team. Besides, at the critical moment, higher command radioed him: "You can hit if you don't get your tanks mauled."

An enigmatic feature of the Egyptian defense of the Abu Agueila position were three successive ridges, all fortified, which dominated a road that cut directly through their center. The defense position had depth but weapons were not used to exploit the depth. Together the ridges could have been defended as a box. But there was no centralized control of fire power and no movement between one ridge and another. Artillery pieces, AT guns, "archers" and infantry weapons were all operated from the same line. The few tanks present were also used that way.

By contrast with the attackers, both at Rahfa and Abu Agueila, defending men and guns were on high ground under heavy earth cover. In numbers of men, there was no real disparity between the two sides, once the fire fight started. At Rahfa and Abu Agueila the Egyptians had sufficient artillery and AT guns to destroy the Israeli armor, had they been handled properly and with vigor. Israeli air and artillery had little success in knocking out these batteries, save east of El Arish when the campaign was about over. By then the defending guns at the two main positions where decision was won had been captured. Most of them were still in working order.

Spreading armor aids the infantry

Though one Israeli infantry brigade got up to Abu Agueila early, it was promptly pulled back. To have committed this foot force, under the conditions, would have been high folly. One infantry brigade shared in the attack against the hills at Rahfa. But it was not a fit job for infantry unaided. The Israeli army tried it that way in several sectors but learned that armor had to be spread more widely to increase the battering before the fortifications could be taken.

So in the end, though Israeli infantry did the pinning and completed the destruction in detail, both at Rahfa and Abu Agueila the strong action of Israeli armor broke the Egyptian back and decided the Hundred-Hour War.

But how much armor? Israeli's army used just two brigades, one in each main attack. The breakthrough forces were also given the task of pursuit and consolidation of ground all the way back to Suez. At Rahfa the battalions deployed organically. For the Abu Agueila fight, the commander chose to hit with composite teams of mixed armor and infantry. Note: light tanks were used for hitting and blocking.

Brig. Gen. S. L. A. Marshall needs no introduction to readers of *ARMY*. He is widely known both here and abroad for his penetrating, accurate and exciting reporting and interpretation of small-unit combat actions and is by far the best battle reporter America has produced. At seventeen he was a sergeant first class and at eighteen the youngest second lieutenant in the AEF. During WWII he was Chief Historian for the European Theater of Operations after having served in the Pacific, where he developed the technique of studying the behavior of men in combat by personal interview immediately after action. Out of these experiences came studies used by official agencies, and his published works, *Bastogne: The First Eight Days, Island Victory, Men Against Fire,* and *The Mobility of the Soldier*. He was Infantry Operations Analyst with Eighth Army in Korea during 1950-51. His observations on the fighting there resulted in *The River and the Gauntlet* (1953) and *Pork Chop Hill* (1956), chapters of which were published in *ARMY*. General Marshall is a consultant for Operations Research Office of The Johns Hopkins University. Between military assignments, he has been an editorial writer for *The Detroit News* for many years. We expect to have another article by General Marshall in an early issue.

Scouting and screening were done by small recon groups in thin-skinned cars.

In the Rahfa fight, the brigade commander planned to use his light AMXs as his reserve during the joined battle, then shoot them through to El Arish as his advance guard. Just before H-hour he got word that a force of T-34s was laagered beyond the fortified hills covering Rahfa. He therefore committed the AMXs and they were used for infantry close support in the assault. They took hard pounding but still carried out the El Arish mission.

How an Israeli brigade of armor weighs in has already been stated in general terms. To reveal specific figures would breach Israeli security. But in round figures, and as an educated guess, we are talking about 6,000 to 7,000 men at the outside, moving in the attacks against the two decisive objects of Rahfa and Abu Agueila.

The tank count would be approximately one hundred. Here I am speaking of vehicles used within the fire zones at Abu Agueila and Rahfa. As for tanks which actually drove straight against a fortified strongpoint, matching fire with fire until the ground was won, not more than thirty-five or forty were so used. In the preparation, and during part of the advance, the armor was supported by the fires of a field artillery battalion. But there were no "massed" fires at any time.

If the numbers exclude the idea that "overwhelming force" decided the issue, the plan itself threw away the advantage of local surprise. At Rahfa the brigades had to camp for twenty-four hours just inside the demarcation line, cheek-to-jowl with the enemy. Their engineer parties spent one night trying to define and breach the minefields. This, the Egyptians knew.

Why one side lost Sinai and the other gained it by a knockout in the first round therefore becomes clear. It was not a matter of weapons advantage or of the shock impact which comes of doing the unexpected. The attacking army, having trained its men to fight by night, could re-gather itself and restore momentum at all levels even when the dark concealed a costly counter surprise. Day or night, it never ceased pushing.

Such "secret weapons" as figured in the campaign belonged to the defense. They were nowhere well used or the attacking armor would have been stopped. The army of the defense remained chained to its protection. It would not advance men even to repair a breach in its outpost line or to remine the gaps cut in its minefields though the ground was not fire-interdicted. It was not led. In its response to developing situations there was not one example of strong, resolutely directed motion.

Though the Israelis tried to maneuver the enemy out of Sinai rather than destroy him, close combat can be as violent in small wars as in large ones

Mobile minds and willing hearts

Quite correctly, the Sinai sweep is regarded as a masterpiece of mobility. Statistics alone support that view. But it was made by the mobile mind and the willing heart rather than by the machine. The men of this small army did the best possible with what they had. They responded as if what is all-important is to live fully. To regard their effort in any other light is to miss what counted most in achieving success.

After completing my field work, I talked to General Dayan. We exchanged impressions of the battle. He wanted to know what I had learned about his Army. I told him that the most satisfying thing should be that at all levels leadership was intent on energizing the fight but that they first sought to learn what was happening to men. All were ready to gamble. But they did not risk blindly. They gave orders only after doing everything humanly possible to learn the odds. That was why so many leaders died. They went forward to learn rather than to stunt heroically.

Dayan said: "What gratifies me most is that we lost but one prisoner. He was the pilot wounded and brought down behind enemy lines with no chance to escape. That kind of score is no accident. It means that all men were trying, that all believe in this army."

That is a command way of saying that mobility is in us: all we need is to return to the source and let it flow freely.

MAKE 'EM PROUD

COLONEL R. W. VAN DE VELDE

A top outfit knows it can depend upon the Old Man at all times

A CARTOON frequently displayed in the bars of officers' clubs shows clearly why "the brass" does not realize why a military career does not attract junior officers and enlisted men. An irate general is seated at his desk, before which a lieutenant stands rather quakingly at attention. The general is waving a paper and saying: "Jones, I don't go along with your letter complaining about the Officers' Club. *I've* always had very good service there."

The cartoon invariably produces a laugh, but the laughter has a bite because many realize how true are its implications. Rank, which presupposes age and length of service and competence, is entitled to its privileges. I don't go with the Doolittle Board's recommendations for wiping out the "caste system." An army is and must be authoritarian. Discipline is vital to its success, and discipline in large groups of men necessarily rests on a hierarchy of rank and degrees of authority and power. Varying perquisites should accompany each rank, partly as a reward for attaining it, partly as an instrument for marking differences in grade. But if rank must have its privileges, it also carries with it its responsibilities.

I've never forgotten a lesson by an "old" (twenty years of service) captain at my first meal in the field after joining my battery. My orderly directed me to the tent fly under which the battery officers were to mess. He brought me a plate of food, but before I'd taken two mouthfuls he was back to tell me the BC wanted me at the mess line. When I reported the captain took me aside and said, "An officer never eats until his men have been fed."

That was a small incident in the life of an inexperienced shavetail, but the lesson stuck, and I think the loyalty and respect I have conveyed to my subordinates and have received from them in return are due to the attitude of that oldster who started me off on the right foot. His lesson clearly placed privilege and responsibility in their proper relationships. As an officer I was privileged to be served and to have an orderly clean my mess gear—not because of who I was, but because an officer has more important things to do. He must run the outfit, and part of that job is seeing that his men's needs are satisfied.

RESPONSIBILITY to one's subordinates goes beyond chow lines. It involves protecting one's men from unnecessary anxiety or hardship or danger, and if these can't be avoided they must be shared so long as doing so does not interfere with the unit's mission.

I think too many officers today overlook the fact that each raise in grade, with its new set of privileges, is accompanied by additional responsibilities. The Old Army adage that "loyalty works both ways" doesn't mean much, I am afraid, to the overseas sergeant whose family is on civilian relief because his wife misread her port-call orders and arrived at the POE too soon. Or to the lieutenant whose wife is shunted off to a distant hospital for dental treatment that the local dispensary dentist could have done if her husband had "enough rank to raise a stink." Or to the colonel suffering from a recurring malarial attack who can't get home, while every general on the post has a full-time car (sometimes used by his dependents too).

You can call these "incidents," but they all occurred within the observation of one officer in a couple of years, and can probably be multiplied many times in the experience of others.

The Army strives to keep good officers and men, but we won't keep them and we won't make recruits into good career men unless we make them proud of themselves, of their outfits, and of the Army. But can we do it under conditions which they assume are normal in Army life? Like living in substandard housing; waiting months for dependents to join on a PCS overseas; bundling up even a desperately sick child to take it to a dispensary miles away because the doctor won't make house calls; having dependents herded about and treated like indigents or somewhat suspect refugees while being processed overseas; finding that an officer's word no longer has weight unless backed by ID cards, PX cards, bank references, or certificates; finding that generals and other senior officers don't really care how the lower ranks live?

A GOOD army must be a proud one, and pride stems from emotion rather than from an intellectual urge. So pride vanishes, and loyalty to the institution with it, when that institution fails to furnish the proper incentive, or worse still, blunts existing feelings by careless or debasing treatment. The soldier is human. Treat his family well and you'll get constructive drive.

Our army used to be a cohesive fraternity of proud officers and men whose dependents too were proud of being "Army." Now we are bigger and more widely scattered. Maintaining cohesion is more difficult, but that's all the more reason for trying. Too many of us don't.

THE best outfits are those whose members know they can count on the Old Man—not in condoning their faults or overlooking their weaknesses, or in having others do their work for them. A commander who knows and treats his men as the separate and distinct human beings they are; who teaches and leads them and, when necessary, punishes them as adults. He is liberal in giving encouragement and praise when they are due, and personal attention and help when they are neeeded. His loyalty goes downward as well as upward, and he expects the same practice from his subordinates.

When your men know you'll go through hell for them and you know they'll do the same for you, you have a proud outfit and are experiencing the greatest satisfaction military life can bring. In the words of that Army pamphlet, you'll have "a first-class organization to which it is an honor to belong." Men will vie for that honor.

Colonel R. W. van de Velde, *Artillery,* a 1933 graduate of Princeton, was in the original group of Thomason Act officers. He is now on duty at EUCOM.

THE IMPACT OF LONG-THRUST ATOMIC WEAPONS

Strategic fire power promises to make artillery the true king of battle

COLONEL BRADFORD BUTLER, JR.

ARMY leaders have often advised us to shed the blinders of conventional thinking and to enlarge our vision. A typical expression of this was General Willard G. Wyman's address to a graduating class at Fort Benning. In his talk General Wyman reminded his listeners of an elementary tactical fact of life: superior force at the point of decision on the battlefield is achieved by the proper application of mobility, fire power, and communications. These three elements are convenient categories for considering some of the Army's problems today.

Money and brains have been devoted to mobility and communications, and new doctrines and equipment are on the way. It is not my present purpose to criticize or minimize the importance of these activities. Certainly considerations of mobility such as expressed in CONARC Training Memo No. 13, 4 June 1956, "Organization & Training for Mobile Task Force Type Operations," are essential to the evolution of current tactics. But I would call your attention, and this is my purpose here, to the fact that in all such studies fire power is limited to its traditional supporting role. The task of assessing fully the fact that atomic fire power organic to the Army is capable of exerting a primary strategic role far beyond the normal supporting role of artillery has not been done. Prompt recognition by the Army of the significance of this is necessary for many reasons. Not the least is the need to counter a general public misconception that the strategic employment of atomic fire power is exclusively and necessarily a function of air power. It may be more effective if we say it bluntly: the Army has lagged behind the Air Force and the Navy in *discussing* a strategy of atomic fire power.

WHY is this so? Not really because the Air Force and the Navy have encroached on or preempted functions that are rightfully the Army's. Rather because the change in strategy implicit in atomic fire power in particular, and other aspects of modern war in general, have so far not been concretely reflected in Army doctrine.

Field Service Regulations state that the "basic doctrine of Army operations is the defeat of an enemy by the application of military power *directly or indirectly* against the armed forces which support his political structure."

Colonel Bradford Butler, Jr., a graduate of Yale and of the National War College, commanded a National Guard artillery battalion through World War II and was integrated into the Regular Army in 1946. He is now executive of III Corps Artillery at Fort Hood and is chief of the artillery section of Hq. Exercise King Cole.

And they further state that "the broad mission of Army forces in war is to bring to bear upon an enemy's *military capacity* sufficient power at decisive points and times to render it *ineffective*." I have italicized some key words because they show how the Army's thinking to date on atomic fire power doctrine has been channelled. Army doctrine is broad enough to encompass a strategy for atomic fire power—but that alone doesn't prove much. Because your creel is big enough to hold a fine mess of trout doesn't mean you are all set for a fish fry.

The first of the quotations above from Field Service Regulations speaks of the application of military power "directly *or indirectly*" against armed forces. This manual is almost entirely concerned with direct applications of military power, and quite logically so. However, the door stands open for indirect applications by the Army. In days gone by armies didn't have much of an indirect strategic potential. Now they have. Megatons of atomic fire power can't avoid having indirect strategic influences that can far transcend the movement of troops from point A to point B. We should next question the meaning of "military capacity." The Army tends to equate "military capacity" with "armed forces." Only a fanatic would try to claim that an army should minimize its role of being ready, willing and able to deal effectively with enemy armed forces. But only a fool would refuse an opportunity to render these forces ineffective by any simple, quick, and economical method. To cover all possibilities on this score we must include a study of methods other than through the direct clash of forces. This extends into an assessment of army capabilities for indirect action, both tactical and strategic, atomic and non-atomic, psychological, conventional and unconventional. And it entails many other problems, like target analysis *vis-à-vis* these various capabilities. These problems are unprecedented in the experience of a field army.

THIS brings us inevitably to our third point: the determination of when an enemy's military capacity is "ineffective." This will remain substantially a matter of opinion until atomic fire power is tested in war. But some intelligent estimates are being produced, and more are needed. There is no denying that an enemy force is ineffective when it is locked in our stockade, or when we have buried it. But it can also become ineffective under a much wider variety of conditions. For example, FM 100-31 says that "moderate damage, with essentially complete loss of combat effectiveness until regrouped" will result from thirty per cent casualties. But many questions cannot be answered by such figures alone. What would be the true effectiveness of an untouched division that saw its neighboring division destroyed in an atomic strike? Which enemy rear-area facility, obliterated by a megaton blast, would offer most promise for breaking the army's will and capability to fight? And why? The destruction of what other strategic communications zone or zone of the interior targets would render a dependent field army "ineffective"? The Army's Redstone, Corporal and Honest John have some capability of reaching into the enemy's communications zone and it is only a question of time until Army guided missiles will have range for missions far beyond anything covered in current doctrine. The strategic ramifications of such missions are obviously as much a concern and responsibility for the Army as for the Air Force or the Navy. Probably more. In the best interests of the United States that service will probably achieve preeminence in atomic fire power which first demonstrates a practical grasp of these implications, and points the way to sane,

CORPORAL

280mm "ATOMIC" GUN

reasonable and practical solutions.

This month presents the Army with a major opportunity to wrestle with this problem. In CPX-FTX King Cole, nearly every type of Army artillery unit having an atomic fire-power capability will take the field. Among the weapons present will be most of the Army's operational missiles and its newest guns and howitzers.

KING Cole will be a unilateral Army exercise. Its objectives are to provide training for commanders and staffs in tactical intelligence and logistical operations under assumed conditions of extensive atomic CBR, and electronic warfare capabilities by both sides. It will aim at providing realistic field training of special weapons, antiaircraft and certain other types of participating units, particularly signal and ordnance support. And it will conduct certain tactical troop tests that relate to Futurarmy operations. These troop tests are four in number.

(1) Test of the tactical support center. This test is designed to determine the best organization, equipment and procedures for the full-time control and coordination of all field army tactical support means.

(2) Test of intelligence doctrine and military intelligence support. This is designed to test revised doctrine pertaining to intelligence staff functions.

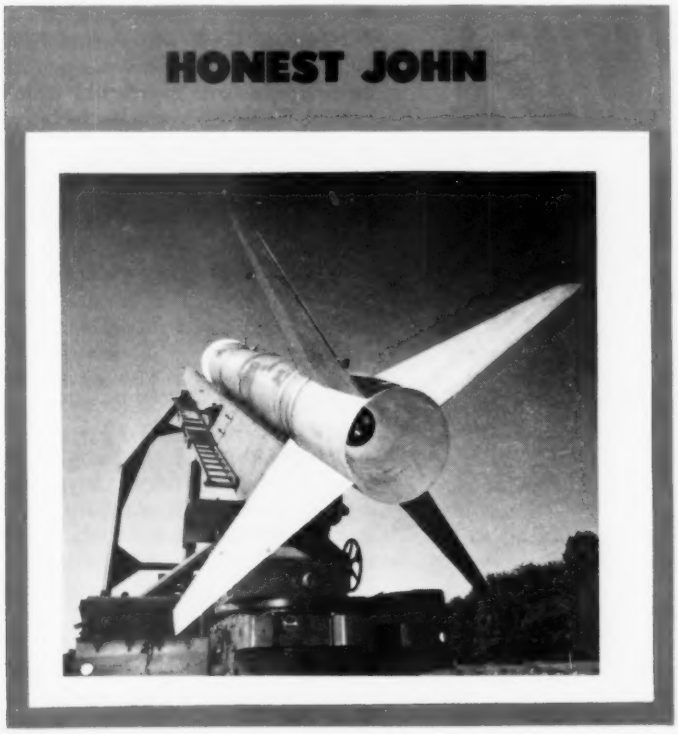
(3) A special demolitions test. This is designed to test proposed doctrine for employment of atomic demolitions, to include all the operations necessary from the stockpile to the emplacement.

(4) Test of ordnance guided missile and special weapons supply. This is designed to test the new stockpile-to-target supply sequence proposed for support of missile and special-weapons units.

In addition to these four tests, there will be an area (grid) communications system test.

The presence of such a tactically diverse array of artillery and guided-missile units—in most cases complete organizations—testing the entire supply sequence of atomic munitions, is an event of major importance to all artillerymen. It would be premature to judge whether King Cole can fairly represent the opportunity for artillery doctrine to start emerging in its added role of a primary arm—for the delivery of strategic fire power. But all redlegs will be watching to see if these units will be limited to the primary mission of field artillery, as stated in Field Service Regulations: "to support infantry and armor by neutralizing or destroying with fire those targets most likely to hinder the accomplishment of their missions." Or will this fire power be used on additional and deeper strategic fire missions indirectly calculated to render the enemy forces ineffective?

THE capability of artillery to deliver atomic fire power for strategic purposes raises artillery to the role of a primary arm in addition to its traditional role of a supporting arm. Perhaps it is only human that the old primary arms—infantry and armor—may look with something less than enthusiasm on artillery as an equal partner for certain purposes. But before any fratricidal strife breaks out on this line, let us remind ourselves that atomic fire power is not exclusively an Army cake to be sliced. It represents a wide range of capabilities and strategies in which the other services are ready, willing and able to operate. And Uncle Sam and the taxpayer are waiting to judge which service can demonstrate the most wisdom and professional competence in suggesting an atomic strategy best suited to the principles and interests of the United States. In the past the Army has always risen to the needs of the times—and the need to study employment of atomic fire power is one of the most pressing needs of these times.



The Taxicab Army Rides Again

ICBMs were bursting all over and the Nemoviks were making a vertical envelopment of Metropolis. Then old faithful, the family car —1971 model—roared to the rescue

Maj. James W. Kerr and Capt. Thomas G. McCunniff

CERTAINLY nice of you to drop in, Al. How are things down in the new subterranean Pentagon? If the division passes its final tests next week, I'll sneak off and look your shop over. Tell me—on the level—is this a *bona fide* leave you're on, or are you just snooping here on another after-action survey?

Uh-huh, just as I suspected! Well, relax, I won't tell anyone here in the 174th the truth about your "leave." But this does give me a good chance to sound off on how bright I am. It's mighty gratifying to this stupid old doughfoot, mixed up in the thick of a war, right in the middle of Nebraska, to know that one of his hunches of twenty-odd years ago has paid off.

I hate to think what would have happened when the Nemoviks jumped on Metropolis last month if I hadn't twisted Bo Johnak's arm on mobilization assignments for civilian vehicles back in—well, long before the Hundred Days—the ICBM flap of 1971. Bo was up on the JCS again, coordinating military and civil defense activities.

"You're crazy," he shouted at me. "Other infantrymen go hunting or lie on the beach when they're on leave, but you come up here and try to sell people your crackpot ideas. That Commie on Old Baldy must have hit you harder than we thought."

"Horsefeathers!" I gave it back to him. "He hit me instead of you because he knew who has the brains, and even if he'd ruined mine I'd still be way ahead of you. Now listen, shining light of the super-staff; listen while Papa passes you the word.

"How long has it been since federal registration of all motor vehicles went into effect—ten, twelve years? Ever since the ICC has had a full record

Major James W. Kerr and Captain Thomas G. McCunniff, both *Infantry*, have collaborated several times in *ARMY* since 1955. Major Kerr is on duty at Sandia Base, while Captain McCunniff is in the Far East. Their latest was "Give the Regiment a Home Town" (April 1956).

of the ownership and whereabouts of every vehicle, civilian and military, in the USA. If we ever get invaded, or our motor-vehicle production facilities get wiped out, we'll need to draft vehicles like we already do one hundred per cent of the people. And we'll be just that much ahead of the game if we have a planned utilization, an M-day job for every one of them, instead of having to commandeer them like they did in Paris in World War I."

Well, I beat Bo down, and he got the idea bought in the right places, and it has really paid off. There was the time some crackpot blew a bridge ahead of a flood relief train creeping in toward Mount Lorist. The highway bridge was already out, but the engineers got a footbridge over the blown span of the railway bridge, and the troops walked over in short order. On the far bank they loaded onto a convoy composed of all the six-passenger cars from the two nearest towns, hustled into active duty in their M-day role of a light transport battalion. Really saved the day. Funny how every place there has been an emergency mobilization like that, gripes have stopped and accidents have dropped off, partly due to some GI training in driving and maintenance, and partly because a sense of responsibility in having a significant duty assignment seems to move our people, especially when they can see that it all has a purpose, and that the setup works. It hasn't been all sweetness and light, but by and large the system has clicked.

REMEMBER the Hundred Days, when ICBMs were lighting all over the landscape? And when it looked like a big Nemovik landing on the West Coast? Bo tells me we were all set then to push the M-day automotive panic button. As it was, dozens of local mobilizations occurred to cope with ICBM hits. I'd say it was in the Hundred Days that my idea was really vindicated. And then our Nike M57As saturated the Nemovik capital at Bultograd, and the uproar came to a mighty abrupt end, exactly a hundred days after it started.

But not the transportation uproar—it got louder and louder. M-day jobs got tougher and tougher, and most units had drill sessions at least once a month. Believe it or not, people were fighting to get into the good units. Like the recon outfits—manned a hundred per cent by sports-car enthusiasts, with a Thunderbird platoon, a Corvette platoon, and even in some cases a platoon of foreign cars left over from the days when you could still import things. And the fights you used to see on drill nights! Al, I tell you, you haven't lived until you've seen the captain of a hundred per cent Chrysler company have it out with a Buick owner who wants to transfer in.

"Why can't I?" he'll say. "The regs say I can."

"Like hell!" replies the Chrysler CO. "The regs say I can make my own decisions on voluntary transfers, and I don't want no ashcan ruining my snappy outfit."

"Ashcan! *Ash*can! Why you lousy hotrodder! My buggy can outscratch, outrun, out . . ."

"Yeah—*buggy* is right. Now scram! There's a Ford platoon over on the west side of town. Maybe they'll make you motor sergeant, if you're so damned good."

Yep, things got pretty snappy at times. Marie and I bought an obsolete jeep after the Second Korean police action, to use duck hunting, and she hardly squawked at all when I put a dozer blade on the front. Her emergency post is at the aid station in Mardiston, where we live, but she got interested in the transport organizations herself, and even learned to use the dozer blade to help clear cross-country routes on drill days.

Remember my old Pontiac? I never did bother with the paint job, so I could really enjoy myself the day the word came out that all civilian vehicles had to be painted camouflage colors. But you really should have seen your classmate Ajalov when they started slapping that o.d. paint on his fire-engine-red Cadillac. He was a sight to behold, and his wife finally took their teen-age son home so he wouldn't have his vocabulary and morals both completely ruined!

WELL, to get back to my steel helmet story. . . . It's all history now, so I scarcely need to tell you about the rude shock we got last year, when we had settled down to "normal" again, and were learning to house a few million extra people in our dozen or so undamaged cities. We were slipping back into routine when those damned Nemos made their surprise landing on the East Coast. Since then we've lost practically all our automotive production capability, some of it three times over, and every combat-ready division has been thrown into the line. Right now it looks like we're holding OK, and maybe even gaining a little ground, but their parachute attacks keep giving our home guard and training units a fit, all over the thirty-nine states we have left.

Like last month, when they tried to pick off Metropolis, with an airdropped RCT, or whatever the Nemoviks call them. I was sitting right here in my office when the first report came in. Some civil defense lookout near the north city limits, exactly sixty-seven miles from here, had spotted the first stick of parachutists jumping at eighty thousand feet. As assistant division commander I had the job of keeping things ready for our emergency missions, and Mission B was defending Metropolis against enemy ground attack. The 174th Division was almost through unit training. In fact, we'd be in the line right now if we hadn't had to drop everything to rescue Metropolis, or more precisely, its armament works, mostly underground, of course. The worst thing, as you are well aware, was that all our military vehicles, except a very few post administrative

types, had been sent to the front a week after we got them. Fortunately, the reserve transport battalions in the three nearest towns—Bellville, Mardiston and Greenlees, were pretty active, and we had a different platoon on federal duty each week to keep us in business. The battalions held M-day rehearsals every two months, with the 174th participating. These rehearsals were over and above the regular drill periods.

SO, like I said, we got the call from Metropolis, early one Friday morning. I notified the CG—God rest his soul—he should have known better than to try to capture those two Nemovik paratroopers single-handed—and cranked up Mission B. By the time CCA was ready to roll, the medium transport battalion from Mardiston, the closest town, was lined up by the main gate in assigned spots, each vehicle beside its number painted on the curb. I could see they were loading OK, so I went over to goose CCB, and let my aide throw a needle into the two transport battalions from Bellville and Greenlees. So I didn't see them pull away for Metropolis, much less see the jeep with the dozer blade slip in behind the first march unit. Hell, yes, she was AWOL from the aid station, and the jeep was supposed to be turned over to the engineer company in CCB! Anyway, CCA highballed toward Metro, a hell of a lot faster than a six-by-six convoy would, when you come right down to it. The bridge over the Bigger River was intact—the guard detail had mowed down a fifth-column crew trying to blow it just after dawn. So they were figuring on getting into Metropolis in another twenty minutes at sixty-five miles an hour when they ran into some trees felled across the road where it crosses a fill near Locust Swamp. They hauled them out of the way in short order—no booby traps—but they lost one Buick and half a squad when the driver goofed and followed too close and had to go off the road when the lead car slammed on its brakes at the roadblock. The loading plan really paid off in this instance—everybody had his weapon and rations in his lap, except for the poor medic, who was sitting in the BAR-man's lap himself. The assistant squad leader was driving, as usual, with all packs and impedimenta in the trunk, so they were salvaged forthwith.

Marie wasn't the only AWOL that day. Old Man Kissinger, the biggest tightwad in seventeen counties, pulled his 1967 antique alongside the curb into his loading space, and then refused to budge from behind the wheel. Said on the last drill some whippersnapper had driven it over thirty-five and he wasn't about to have it happen again. In all the uproar, he got by with it, and after the wreck he wound up as lead vehicle. And would you believe it, the company commander had to caution him four times and finally threaten him, to keep him under eighty miles an hour!

Yeah, they took off again, Old Tightwad in the lead, but a few miles on, a culvert had been blown. The creek bed was only a few feet deep, but there were muddy cornfields on both sides of the road. A few cars got through, but several were stuck by the time Marie got up there with the jeep. Two-and-a-halfs with six-wheel drive might have been able to make it, or at least a few could have, until they churned the place up too badly. Marie didn't waste any time wishing for two-and-a-halfs, though, because even they wouldn't have solved the problem alone. She put the jeep in four-wheel-drive and went right to work with the dozer blade. Some of the troops tried to get her to let them take over, but nothing doing! In a few minutes she had a passable trail down the shoulder and a ford through the creek, and the convoy started moving again. She stayed there, too, thank God! and by working between march units kept the bypass in shape. She also kept herself out of the fight at Metropolis.

YOU know the rest, or neither of us would be sitting here this morning. Yes, Al, once more a taxicab army made it on time, this one on the basis of a well-rehearsed plan. The Nemoviks lost a whole RCT by whatever name. Metropolis is still grinding out weapons. And Bo flew down for a couple of drinks with me—too bad you missed him.

Marie? She got chewed out good by the aid station CO—he's our yard man—and if you'd like to join me I've got to meet her out on the parade ground right now. She's getting a medal, and afterward we're going out to buy her birthday present. She wants an A-frame for the back of the jeep, with a power take-off for lifting logs.

A HOARY FALLACY EXPOSED

Who Said 'More for Less'?

COLONEL LESTER L. WHEELER

If 6,000 U. S. soldiers armed with modern weapons can replace ten to fifteen divisions, why can't 6,000 Communists replace the same number of Soviet divisions?

IN a recent issue of a national magazine a graphic chart was shown which depicted MODERN WEAPONS (nuclear) zooming up, and something tagged LARGE ARMIES dropping down. The explanatory caption read, "In Italy 6,000 U. S. troops with modern weapons might replace 10 to 15 divisions." The accompanying article stated that some military officers say the United States may be able to reduce its present Army commitment in Europe from 250,000 to less than 50,000 men. Other phrases in the same vein appear frequently, such as "numbers would be greatly reduced," and "a drastic reduction in the size of the ground forces needed to defend Europe can be carried out." The essence of this article seems to be the thought that modern weapons eliminate the need for large armies. This concept is faulty, short-sighted and dangerous to the peace of the world and the security of the United States. Furthermore, it is alarming to learn that some of us say these things. The argument is an old one and we officers should know better.

Back in 1941, when western Europe was a flaming ruin, a particularly powerful member of Congress was vigorously expressing the view that large armies were a thing of the past. He said that what was required were "small highly trained, mobile, hard-hitting mechanized forces." And he pointed to the spectacular successes of the German panzer forces in France as an illustration of his point. One day a group of young officers at Fort Benning were debating this concept. They seemed to reach the general agreement that a *small,* highly trained, mobile, hard-hitting, mechanized force would always be effective until it attempted to engage a *large,* highly trained, mobile, hard-hitting, mechanized force. A battalion commander who had managed to accompany German forces into Poland as an observer entered the discussion. He took great pains to point out that the German panzer formations were sustained and reinforced by two and a half million foot soldiers who were themselves, supplied by horse and wagon. He also suggested that this mass of soldiery formed the base from which the panzer formation struck with such devastating application of fire power, mobility, and shock action. Such discussions were quite

common among professional soldiers in those days, but it is readily apparent that those officers who are now saying that 6,000 troops with modern weapons might replace 10 to 15 divisions did not hear this battalion commander's opinion, based on his personal experience.

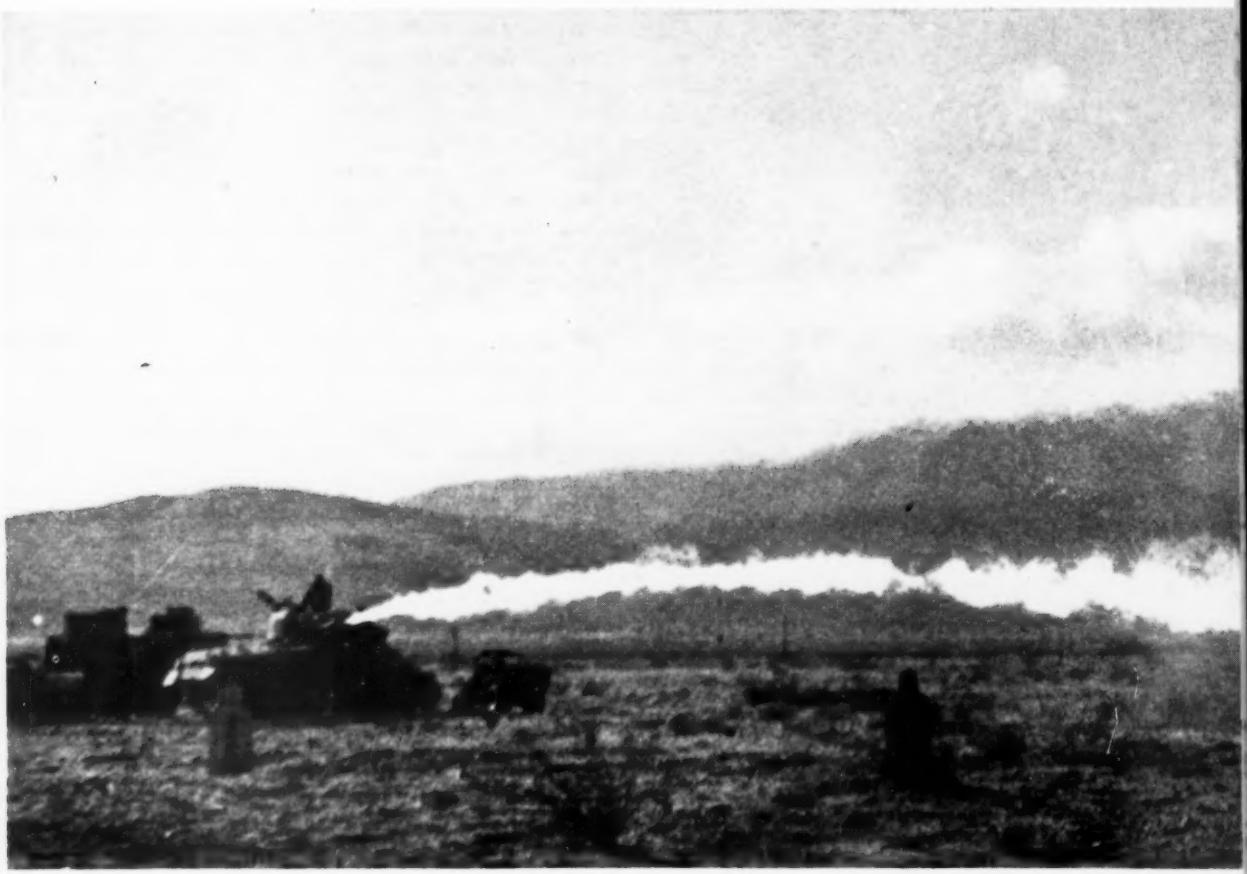
After the operation on Leyte in 1944, another incident occurred which is related to the lack of sufficient numbers of fighting troops. A group of staff officers in the 24th Division were reviewing the course of that action. They concluded that battle casualties could have been reduced in number had there been more fresh troops available for commitment against the major reinforcements which the Japanese threw into that campaign. The discussion drifted away from this specific incident to a more generalized consideration of numbers. This gave the division's chief of staff the opportunity to observe that twice in his lifetime Germany had gambled on overrunning western Europe and dominating England before the United States could expand its pitifully small peacetime armed forces, and put effective fighting strength in the field against her.

Colonel Lester L. Wheeler, *Infantry,* served in World War II with the 24th Infantry Division in the Pacific, and commanded its 34th Infantry during the Mindanao campaign. A graduate of the Military Academy in 1935, he has been a member of the Department of Tactics at West Point, an instructor at the Armed Forces Staff College, and is a graduate of the Army War College. In Korea he commanded the 5th RCT. Colonel Wheeler is currently on duty with the U. S. Army Infantry Board at Fort Benning.

A FEW years later I heard a distinguished guest lecturer to successive classes at the Armed Forces Staff College (this was before Korea) point out that all the talk about reduced defense expenditures and the savings of natural resources should be accompanied by discussion and thought about what it was we were saving, and for whom we were saving it.

Then there was a statement made by a most distinguished Elder Statesman at the Army War College in the spring of 1952. He asserted that our failure to mobilize to the degree necessary to to meet the Korean situation efficiently had cost the taxpayers about $54 billion. He suggested that our efforts to handle the Korean situation on a shoestring basis were, in the long run, unjustifiably extravagant and wasteful of material, money and men. Surely some of the military officers who are now saying that "a drastic reduction in the size of the ground forces needed to defend Europe can be carried out" were present in that lecture hall.

There is another incident which exposes the error in the idea that modern weapons eliminate the need for large armies. In Korea a few months after the cessation of hostilities in 1953, the then new Chief of Staff of the Army demonstrated that from the experience of World Wars I and II we could anticipate that more effective

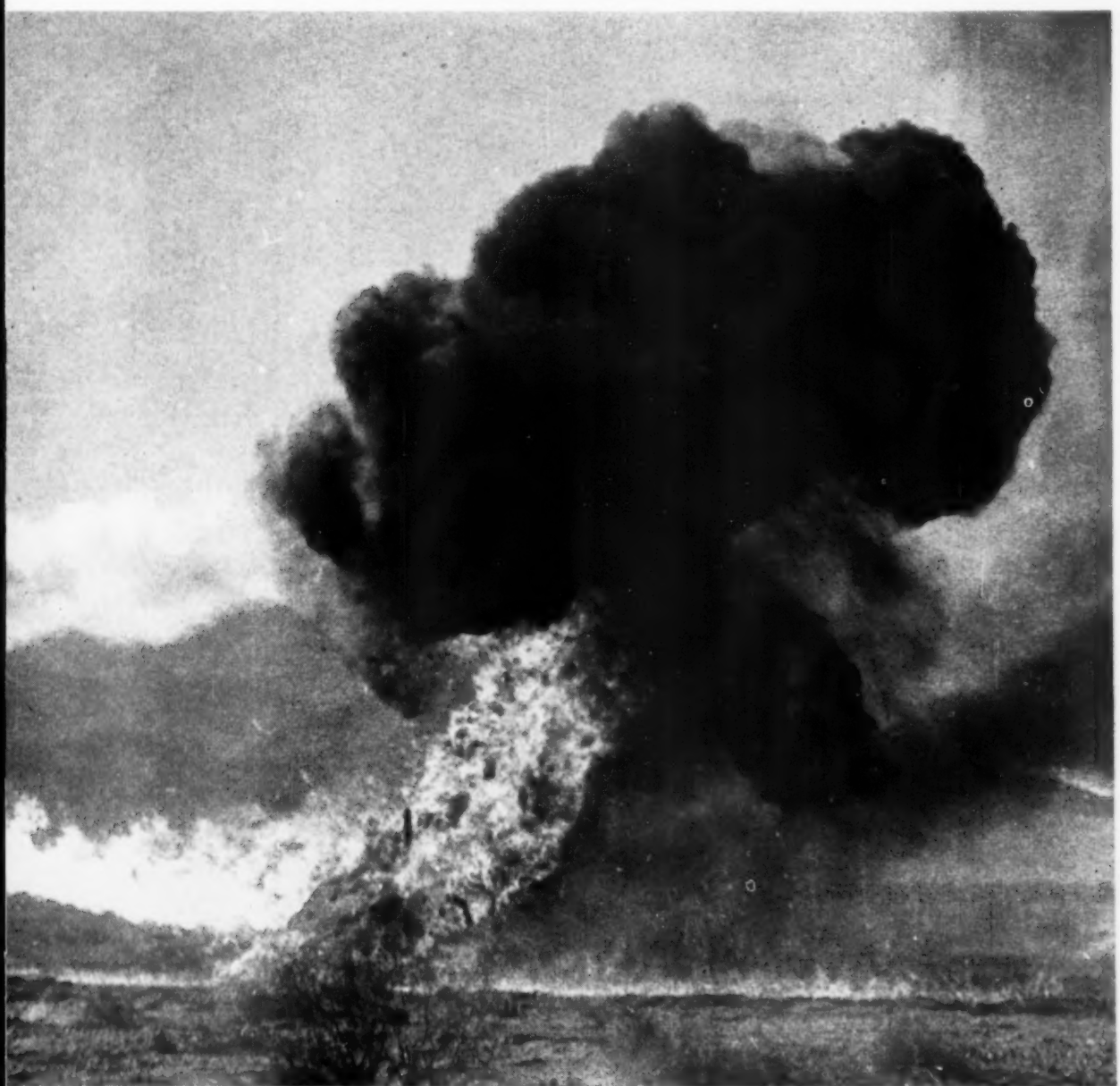


weapons and greater technological improvements would require larger armies rather than smaller ones. General Ridgway's views were given considerable prominence in the public press. One would think that considerable weight was attached to them by these officers who now say that we no longer need large armies.

THERE is the view of the late Great Physicist who is reported to have observed, "I don't know what weapons we shall use to fight the next war, but the one after that will be fought with bows and arrows." Even if the story is apocryphal, the warning it carries should be carefully considered before we permit ourselves to advocate smaller military forces.

The argument for reduction of strength, with apparent monetary savings, is quite attractive in these days of heavy defense budgets. It is popular, too. It looks like an easy way to solve many problems which beset us. But the disturbing factor is this: None of the military officers who say that we can effect sizable reduction in our armed strength in Europe has given consideration to the obvious. It is readily apparent that if "6,000 U. S. troops with modern weapons might replace 10 to 15 divisions," so also may 6,000 *Communist* troops with modern weapons replace 10 to 15 divisions! Does not this fact knock the props out from under this old and fraudulent argument that we can have more at less cost?

The Vice President of the United States understands this. On 23 August 1956, in accepting his renomination, he expressed himself on matters of the national defense thus: "No sacrifice is too great if it is the price of freedom."



SKY RAID

ELEMENTS OF 101ST AIRBORNE TESTED IN CONTROLLED MANEUVER

Jeep mounting a 106mm recoilless rifle is hooked to H-34 helicopter in test of air mobility of the infantry platoon of recon group

Maj. Gen. T. L. Sherburne, CG of the 101st, briefs a visiting newspaperman

As always the final move is by the footsloggers

When the airborne hits the mud, the engineers take over with shovels and airborne bulldozers

Recon troop communicators man a radio-teletypewriter unit (AN/GRC-46) mounted in an air-transportable truck

Heavy rains fell during Sky Raid but the elements cannot ground the support fire of the Honest John rocket, organic to the 101st

THE FIRST BATTLE FOR BRITAIN

COLONEL GEORGE P. WELCH

The proud Legions led Roman civilization to the far corners of Europe and across the English Channel

I
Decision to Invade

In the years 55-54 B.C. as now named, or from the founding of Rome 699-700, Caius Julius Caesar, a man of many talents, not the least of which was an acute sense of public relations, led two forays into Britain. We today would call them reconnaissances in force, much like the assault on Dieppe in 1942.

Although undefeated, Caesar was shortly forced by matters nearer his heart, ambition, and Rome to withdraw. He achieved nothing, save perhaps to imprint on the British tribes a sense of the invincibility of Roman arms. He sent word to Rome of the conquest and was duly honored. But a conquest without military occupation to make it stick is an illusion to which Caesar's, like more modern examples, was no exception. For nearly 90 years the British tribes were allowed to pursue their mutual brigandage, undisturbed by Rome.

There was reason enough for the lapse. During the first quarter century of this interval, Rome was in political chaos. A ferocious civil war between Caesar and Pompey wracked the Roman world. Victory briefly crowned, and assassination abruptly terminated, Caesar's astonishing career. Fighting broke out among the self-appointed heirs, establishing again the difficulty every free people encounters in attempting to govern itself by proxy.

The victory of Octavianus, Caesar's nephew, at Actium in 31 B.C. established him as Emperor in name as well as in fact. Under the honorific title of Augustus, soon to become a surname for him and his successors, he established peace and restored order to a scarred but sturdy civilization. By 27 B.C. he was firmly in the saddle and the majestic, unchallengeable era of the Pax Romana began.

Forced by circumstances, and sharply prodded by the loss of three legions in Germany east of the Rhine in 9 A.D., Augustus attempted to set fixed limits to the Empire, and to forego further conquests.

Unfortunately, it is difficult to set a limit to empire. Particularly is this true when the empire represents an area of law and order, of economic prosperity and general living standard raised on a plateau above the peoples beyond the frontiers. For beyond every pacified former enemy or selfish ally lies another, by its cupidity and ignorant rapaciousness inviting conquest.

To Augustus, the English Channel appears to have seemed an adequate barrier. But to the Britons, and to their kinsmen of Gaul, it was a means of facile intercourse, wholly devoted to the exacerbation of Rome.

Peace and the protection of Rome were bringing prosperity to Gaul. Prosperity encouraged trade, and justified the speculator's risks. Britain had lead, iron, silver, tin, and hides, all commodities eagerly sought by the Roman world. Left at this, all might have been well. But Britain eagerly provided a political asylum for those inhabitants of Gaul either

(Continued on Page 42)

How to cool a pilot in the Thermal

The Douglas X-3, used in heat dispersion studies.

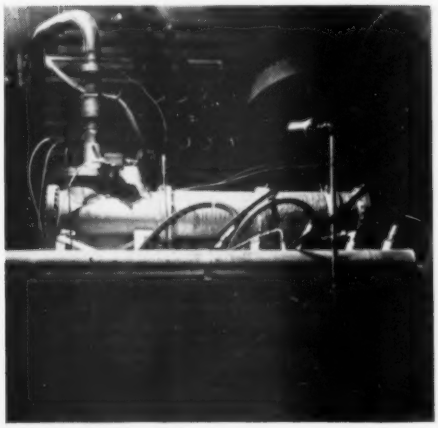
With aircraft that top 1000 mph now in military service, the problem of *heat dispersion* gets growing attention from Douglas engineers.

Once called the heat barrier, science now uses a more accurate term, *thermal thicket.* The faster you fly through the earth's atmospheric blanket, the further into the thicket you get . . .

At Mach 2, twice the speed of sound, a plane's skin temperature can reach 275°F. At Mach 3 it leaps to 650°F, and at Mach 5 hardened steel wilts like lettuce . . .

Douglas is attacking this heat problem on many fronts. Air conditioners powerful enough to cool a theater were tested in the famous X-3 research plane seen at left. In current Douglas missiles, amazing advancements are being made in the design of heat-resisting materials and structures. This knowledge will speed the solution of the thermal thicket problem for piloted aircraft.

Thicket



The Douglas Aero-rotor, an instrument that blasts out high velocity gas at temperatures upward of 3000 degrees Fahrenheit, helps in research for materials to withstand high temperatures and jet velocity erosion. Other work now on the boards at Douglas ranges from designs for the practical application of atomic power to the complete design and building of intercontinental missiles — and even includes the engineering for a space platform first considered as early as 1946.

Depend on

DOUGLAS

first in Aviation

The First Battle of Britain

(Continued from Page 39)

too unruly or too steeped in their ancient larcenous freedoms to savor the blessings of the Roman peace. Operating in the reverse direction, many once powerful losers in the dynastic squabbles that were endemic among the British tribes saw in the might of Rome a power which could, with suitable concessions, correct real or fancied injustice.

The problem was real. The Channel represented an unguarded, too frequently infiltrated frontier. Something had to be done. Two solutions were possible.

The choices: contain or conquer

The first was to garrison and patrol the Channel, much as the Rhine and Danube frontiers were garrisoned and patrolled. The second was to invade and conquer, and absorb the island.

Money and manpower—the perennial and even contemporary problems of military planners—decided the issue. The decision to invade and conquer was taken during the reign of Gaius Caesar (Caligula), probably by 39 A.D., almost surely on the reasonable grounds that it would cost no more in troops than a permanent watch on the Channel and that the resources of the Island, once organized and properly exploited, would measurably increase the tax base of the Empire. In addition, and of at least equal import, the hardy manpower, now a source of mischief, could be won over to augment the defense forces of the Empire, so thinly stretched over 10,000 miles of frontier. There can be little doubt that the decision was the result of acute staff analysis and high level policy decision in Rome, undeterred by any reservations as to the welcome Roman order, law and civilization would receive in Britain.

Caligula, however, was prevented from launching his expedition by other and more pressing problems, probably not unconnected with his neurotic and unpredictable temperament. It remained for his successor, Claudius—"that clownish scholar," in Churchill's phrase—to implement the decision.

It would be instructive could we have a glance at the Emperor's directive as it was received by the veteran general and proved combat soldier, Aulus Plautius, designated commander for the invasion. We do not know where it reached him—possibly at the General Headquarters of the Rhine Army, at Colonia Augusta Treverorum, many centuries later a major objective of the Third U. S. Army, the modern Trier on the Moselle. We can guess its contents only by what followed.

He was allotted four legions together with an undisclosed number of auxiliary units of German, Gallic and Thracian origin, amounting in all to possibly 40,000 men. D-Day appears to have been set for early summer of 43 A.D., determined by the same factors of weather, tides, and moon which so severely limited and even dominated the staff planners for Overlord.

We know the legions. The veteran IId Legion, Augusta, from Strasbourg on the upper Rhine, commanded by Vespasianus, a professional soldier of Sabine farmer stock whose chief characteristics were a sense of supply economy and a disposition to press home an attack; the IXth, Hispana, brought from the Danube frontier in Pannonia, part of modern Hungary; the XIVth, Gemina, from Mainz on the middle Rhine; and the famous XXth, Valeria Victrix, from Neuss, opposite Düsseldorf, on the lower Rhine.

These legions were more than aggregations of soldiers, more than mere numbers on the Army list. Each had its own being, its own sure spiritual life, born of long tradition and unbroken continuity. A thousand lengthy roads had felt their measured mile-eating tread, a thousand battlefields since Rome's beginnings had heard their paeans of victory. Their standards, the venerated eagles, carried emblems of Cannae, and of Metaurus; of Syracuse, and Zama, of Cynocephalae and Pydna, of Magnesia in far-off Asia Minor; and many, many others, punctuation marks in the lengthy tale of Rome's expansion from a feeble city on the Tiber to unchallenged mistress of the civilized world. Where they went they left order and law. From order and the law had grown roads and cities, temples, palaces, schools, justice, peace and a very real measure of widespread prosperity.

Wherever these gifts of Rome arose, the legions had had to go first. Always, the legions had gone first. A long tradition of victory, ruptured only once since Cannae two hundred and fifty years before, pride of unit, the cohesiveness of long service in common, iron discipline and superb physical conditioning combined with a generally high quality of leadership to make them masters of their trade for yet half a thousand years to come.

They did it on grain, coarse milled from day to day by pestle and mortar, and when they could get it, tart Italian wine. They did it protected by body armor fastened to a leather jerkin, a close fitting helmet and a large rectangular

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Colonel George Patrick Welch has been Deputy Chief of Information, Department of the Army, and before his retirement last year was Deputy Chief of the Florida Military District. He makes his home in Palm Beach. He wrote "The Army's Press Relations," in the September 1956 issue.

shield of wood and leather. They did it with the *pilum*, or heavy throwing spear, to the use of which ceaseless repetitive training brought a fiendish accuracy. But most of all they did it with the *gladius*, the short Roman sword used at close quarters.

Defensive and offensive weapons of the school of the soldier were coordinated in tactical exercises which became habit with interminable practice. Tactical doctrine became the possession of every individual, so that in the heat of battle a command was understood even if unheard; legionary, maniple, cohort, legion and army were welded into an agile, mobile, and invincible weapon, almost subconsciously alert to the designs of the trusted commander.

The staging area appears to have been located near the modern Boulogne. We do not know of the myriad details of preparations for the assault, of the shipping required, the logistic preparations, or of any other of the many vexing problems which must have tried the patience of commanders and troops alike.

The Roman 'homesteaders' vent their gripes

One episode we hear of in fragments. Apparently the Roman soldiery shared to the full the right to complain vociferously in the face of real or fancied injustice; this we recognize today as an infallible sign of basic high morale in troops. No doubt the upheaval of sudden movement from permanent garrison positions, sundering both family ties and less hallowed relationships, produced about the same amount of wordy indignation we would expect to hear today if sudden orders to overseas duty came to a unit well established in supposedly permanent station. Perhaps superstition and fear of a world unknown beyond the sea played their parts. In any case, the temper was such that Claudius, being apprised of difficulty, felt it necessary to send a personal message reminding the troops of their duty. He chose for his representative a trusted and responsible member of his staff, one Narcissus, a freedman who had proved that a slave could advance if he had the ability.

The selection of Narcissus was clever psychology. The veteran legionaries, free Roman citizens all, had their pride. The selection of an ex-slave, no matter how prominent, to remind them of their duties carried precisely that degree of implied insult calculated to restore discipline. The troops roared ribaldry in response to the Emperor's message, but there were no more protests.

There is another explanation, more creditable both to Roman discipline and Roman guile.

Traffic back and forth between the continent and Britain was sufficiently frequent to insure that the Britons were well, if tardily, informed of the Roman preparations. When we remember the elaborate and successful efforts of the Overlord planners to provide deception and thereby achieve tactical surprise, we can have no serious doubt that the same requirement rested heavily on Aulus Plautius and his staff.

Whether or not the month's delay was caused by an attempt to deceive, it achieved that purpose. Perhaps trusted agents, experts in psychological warfare, persuaded the Britons there was nothing to fear. Perhaps the British leaders, such as they were, differed little from leaders we read of in our own day, deeply reluctant to disturb the day-to-day convenience of their peoples by resented, because demanding, preparations for the inevitable tomorrow.

In further fairness, we note that the Britain under threat was not a homogenous nation, uniquely susceptible to the leadership and oratory of a Churchill. Many tribes, some wholly independent, others loosely confederated, divided the Island land mass, finding joint recreation, and alternating profit, in internecine bickering and warfare. Among them were not a few chieftains, remembering their ancestors' hopelessness in the face of Caesar's legions, convinced that resistance, if the Romans came, would be useless, and already, if secretly, determined to bargain rather than fight.

Two brother kings, Togodumnus and Caractacus, sons of the Cunobellinus made immortal, with some poetic license, as Cymbeline, were among those few determined if unprepared to resist. On their father's death in 41 A.D. they had divided his kingdom between them, thus halving their ability to meet a common enemy. Togodumnus held the area generally north and east of the Thames, including his father's capital of Camulodunum, the modern Colchester; Caractacus, in general, the Thames River valley westward.

The late spring and early weeks of the summer of 43 A.D. saw a heightened tempo of activity in the river mouths and harbors near Boulogne; across the misty Channel, behind the white cliffs, the British chieftains scoffed at rumors and went about their daily mischief. When at last the Roman army embarked, and after a crossing temporarily marred by adverse winds, swarmed ashore, there was no one there to meet them.

II
Invasion: First Phase

43-51 A.D.

IN order to spread the risk and to obtain room for maneuver, Plautius landed his troops at three points: at Dover to take advantage of the natural harbor; at Lympne, to the west; and on Thanet, to the north, an island formed by two diverging mouths of the Stour.

With tactical surprise achieved, Plautius swiftly joined up his beachheads and consolidated his position. Patrols of cavalry and infantry auxiliaries moved out in wide arcs, seeking contact.

We can imagine the startled profanity of the British chiefs on learning that the long discounted landing was indeed an inexorable fact. Hastily bringing together their chariot fighters and calling up other levies to follow, Togodumnus and Caractacus moved south and east in disorderly if valiant fashion.

At some point on the River Midway, running generally northeast about halfway distant between the landing points and the lower crossings of the Thames, contact was made. With gross underestimation of Roman tactical skill at river crossing operations, the Britons appear to have depended heavily upon the river barrier, and little upon watchful alertness.

In the early morning hours before dawn, Plautius sent his hardy German auxiliaries swimming across. They caught the British off-guard, and paying special attention to hamstringing the horses, creating havoc among the charioteers. Reinforcements quickly followed and a furious battle joined.

In the meantime, Vespasian and his Legio II, on orders from Plautius, was moving rapidly upstream seeking a ford. On the second day his sudden and unexpected eruption on the British right flank determined the issue. The battle degenerated into slaughter of the disorganized Britons and then into a rout. Once again, as so often to be demonstrated over the centuries,

training, discipline, and tactical skill combined under competent leadership to pay off against heavily superior numbers.

Sometime during the battle, Togodumnus was killed. The lack of unified command among the Britons speedily brought even worse disaster. While his brother Caractacus withdrew in unseemly haste but reasonable order toward his own dominions to the west, the followers of Togodumnus broke for their own homes north of the Thames, and crossed that river in a panic that left no precautions against pursuit. With the help of an undestroyed bridge across the Thames, Plautius speedily overtook the fleeing remnants, and by the twin solutions of slaughter and slavery destroyed all resistance north of the Thames. The way to the great British capital of Camulodunum lay wide open.

Here political considerations of imperial prestige—considerations at the highest level as we call them—combined with sound military requirements for regrouping and resupply to bring Plautius temporarily to a halt.

Roman SOP of hero worship

Two civil wars had taught Augustus that the command of the legions was power. He laid down the principle for himself and his successors that no subordinate commander could rise above a certain level of popularity as a military hero and thus become a threat to the throne. Claudius himself was well aware of this principle, and was fully prepared by his presence in France, to take command, and therefore credit for the conquest, at the proper time. No one knew better than Aulus Plautius that the time had arrived.

Somewhere near the village of Lundinium, at the lowest crossing of the Thames, Claudius, with reinforcements, joined the Army. The advance to the northeast was renewed, another victory was won, and Camulodunum was entered in triumph. The imperial dignity insured, Claudius returned to Rome, there to receive the plaudits of the populace and to bury himself again in public business as surcease from marital woes.

There remained the west. With a sure instinct for pressing the offense, Plautius, perhaps even before the coming of Claudius, had formed a task force of the IId Legion, well reinforced with both cavalry and infantry auxiliaries, and given Vespasian the mission of harrying the defeated but still defiant Caractacus and of preventing him from organizing resistance among the vigorous and hardy tribes still untouched by the invasion.

He could hardly have entrusted the task to a better commander. Vespasian appears to have carried out his mission with all the grim tenacity, superimposed on economy of means, which thirty years later he was displaying before the walls of Jerusalem, when not unexpected word reached him he had been proclaimed Emperor. In wide sweeping runs, vastly assisted by the hasty adherence of Cogidumunus, King of Verica—the modern Sussex—he forced the unconditional surrender of the Isle of Wight, moved into Dorsetshire, and then turned north through Wiltshire, Somerset and Gloucester, fighting two powerful tribes and reducing twenty native fortresses on the way. He passed through Aquae Solis (Bath) perhaps noting the healing properties of the hot springs on the way, and halted only at the Severn River where, at its lowest downstream crossing, Glevum (Gloucester City), he appears to have established a permanent legionary camp.

The two powerful tribes mentioned by his biographer appear to have been the Durotriges, of Dorset and Wiltshire, and the Belgae, descendants of earlier immigrants from Gaul; possibly refugees from the wrath of Julius Caesar.

Archaeology bears out the ancient tale. Near the modern city of Dorchester may still be seen the remains of a formidable hill fort, Dunum, of certain British origin. Excavation has bared there clear-cut evidence of the fury of the Roman assault in a cemetery where casualties were hastily buried.

Bones bear witness of the power of the short sword

Bones broken by the slashing strokes of the terrible Roman short sword bear silent witness to the ferocity of the encounter, for cutting and slashing strokes, although practiced, were employed by the legionaries only when practically surrounded and then to clear a fighting space. For more normal battle the straight forward thrust, carefully avoiding bone structure which might momentarily seize and hold the blade to the wielder's eternal discomfiture, was taught as more practical and efficient.

Other remains, ancient skulls bearing in the forehead the small square hole through which the forged iron point of the pilum or heavy throwing spear had passed with conclusive effect, give mute evidence of the extraordinary skill of the trained legionary with this lethal weapon.

While Vespasian was successfully pursuing his mission to the west, never giving the wary fugitive Caractacus time to develop opposition, Plautius, probably turning in relief to field operations after the nerve-wracking amenities of the imperial visit, prepared to consolidate his victory. His chief problem was to assign geographical limits to his penetration, with the decision resting on terrain, as well as political considerations.

From its sources in north Wales, the River Severn winds east. West of the modern Birmingham it executes a ninety degree turn and heads south to its mouth at the head of the Bristol Channel. North of Birmingham a few miles, the River Trent passes on its course northeast to meet the estuary of the Humber, and to empty its waters into the North Sea. The triangle thus formed, bounded by the Humber Estuary, the North Sea, the Channel, the Bristol Channel and the river line South Severn/Trent, formed the richest part of Britain, with the most fertile soil, and a population perhaps more tractable than the ruder and barbaric tribes of Wales and the North.

To this river line, Plautius appears to have assigned his limit of penetration. Easily defended, it could be as easily crossed by his legions for purposes of discouraging attack by frequent showing of the eagles. To defend the line, Plautius gave responsibility in the west to the IId Legion, with headquarters at Glevum (Gloucester). On the east, not only to anchor the line, but to keep an eye on the still unconquered, if temporarily overawed Iceni, of Norfolk and Lincolnshire, he moved the IXth Legion north and established its headquarters at Lindum Colonia, from which, little changed, the name of the city and shire has descended.

He appears to have held the XIVth and XXth Legions as general reserve in the triangle Camulodunum–Verulamium (St. Albans)–Lundinium.

An iron curtain and co-existence

Pacification proceeded apace, buttressed by treaties and alliances with

Practically surrounded at Dunum, the Romans resorted to cutting and slashing with their short swords

tribes both within and without the Pale. In the north the powerful confederation of the Brigantes, under their queen Cartimandua, came to terms that we might now label co-existence. Prasutigas, King of the Iceni, allied himself to Rome, receiving all the honors and privileges which served to conceal his subservience. Across the Severn in Wales, the warlike Sillures and Ordovices, hosts to the indomitable Caractacus, watched, armed, and waited.

With some uneasiness, and perhaps a discontent temporarily concealed, the Britons within the Pale prepared to accept the civilization and majesty, the law and the luxuries, the peace and security of Rome. They may well have had some reservations as to what would be demanded in return.

III
The Great Revolt

49-61 A.D.

THE abuse of power by public servants without adequate training and unrestrained by personal integrity has been a problem common to all governments attempting the occupation and organization of a conquered country. Rome was no exception to this universal truth, although it would be a mistake, in spite of embittered historians of the time, to believe she suffered this malignancy more than do modern nations. Its presence, however, among both the military and civil personnel of the Provincial Government was soon to exact a heavy and tragic payment.

Aulus Plautius, that sturdy soldier, had completed his tour and was replaced by Ostorius Scapula, who had his work cut out for him. Although Caractacus had been prevented from organizing effective resistance to Roman arms, he was still at large, industriously stirring the tribes beyond the frontier to action.

At the same time, the Province must be organized, permanent forts and cities built, the veterans taken care of with land and housing, the civil administrative service built from both Roman and British applicants, roads surveyed and put under construction, water supplies planned for growth, and above all, the inhabitants inculcated in the Roman spirit and in loyalty to the concept of universal Empire. All in all, it was a task bearing comparison with that we undertook in Japan in 1945, with the possible exception that Rome, after a reasonable investment, expected the Province, not only to be self-supporting, but to contribute both money and manpower to Imperial use.

Ostorius Scapula started this multisided program going with dispatch. The captured city of Cunobellinus, Camulodunum, was laid out anew on a typically grandiose Roman scale. Work was started on a great temple to capture the attention of all inhabitants, a magnificent and imposing structure to house the patriotic cult of the Emperor Claudius.

By identifying the worship of Rome and the Emperor, the Roman government hoped to instil in all its provinces that loyalty to the Empire so necessary to its efficient control. The cult, although wrapped in the forms of divine worship, was not in essence much different in purpose from our own traditions of respect for the flag, as the symbol of our nation. The organized patriotism of the Romans was the cult of "Rome and Augustus," identified in Britain with the reigning emperor.

Around the temple area arose public

buildings for the civil administration of the province. At the same time, with more concern for the veteran soldiers being steadily retired from service than for the property rights of the former owners, large plots of land were taken over and set aside for veterans' housing and farming plots. The extent of this appears to have aroused the Trinovantes, the chief victims. In them began to fester a sense of bitter resentment against the new government.

Similar plans for development were put in train at other strategic centers. Verulamium (St. Albans), Glevum (Gloucester) and Lundinium (London) had high priority. The growth of London, never thereafter seriously checked on its way to becoming in its turn a capital of world empire, dates from this time. It became, probably because of its position at the lowest practicable crossing of the Thames, the center of the road system now carried forward aggressively.

Nor did Ostorius Scapula neglect other economic factors more immediately related to revenue. The lead and silver mines known of old were pushed into intensive production. In particular, mines in the Mendip Hills in Somerset were producing under Roman control by 49 A.D.—a scant six years after the landings. A lead ingot from these diggings, stamped as to authentic purity and weight by the IId Legion, has been found in France.

Occupation and punitive expeditions

In the meantime, Ostorius was obliged to pay attention to Caractacus and his disruptive activities beyond the Roman Pale. Two campaigns in Wales, and one armed intervention to restore order among the Brigantes, where the Queen Cartimandua, ally of Rome, appears to have been losing public support, kept Ostorius fully occupied. It took two full years of campaigning before he was able to corner Caractacus and his warlike allies, the Ordovices of north Wales, and force a battle. The decisive nature of the Roman victory appears routine. The wife and children of Caractacus were captured and he himself, after seeking refuge with Cartimandua was delivered by her in chains to Ostorius. The subsequent unintimidated appearance of this British leader in Rome, and his pardon by Claudius make a pretty, if possibly apocryphal story in the pages of Suetonius, the gossip columnist of his day. The Province appears to have enjoyed about eight years of peace and constructive effort.

Prasutigas, King of the Iceni, of Norfolk and Lincolnshire, on his death in 60 A.D. left a will naming the Emperor Nero, who had acceded to the Imperial diadem in 54 A.D., as heir to half his realm, probably hoping in this way to secure Roman support for his two daughters who received the balance. But Nero was far away and his representatives on the spot saw that opportunity for a "fast buck" not unknown to our own superior civilization.

Their ruthless exactions were properly resented and furiously protested by Prasutigas' widow, Boadicea. Her only satisfaction appears to have been a public flogging, followed by the violation of both her daughters. The temper of the Iceni can be imagined, and it found encouragement in the sympathy of the already disaffected Trinovantes. The revolt exploded with terrific violence at a time carefully calculated to catch Roman power fully occupied at a considerable distance.

The new Governor, Suetonius Paulinus, on taking over found a basic center of disturbance in the intransigence of the Druid priesthood and their fanatic followers. Although Roman imperial policy gave the widest tolerance to religious beliefs within the Empire, Druidism was an exception with which no compromise was permitted, probably as much for its resistance to Roman occupation wherever found in Europe as for the assigned reason, Roman abhorrence of its penchant for human sacrifice.

The center of Druidism in Britain, its super-sacred shrine was the isle of Mona, the modern Anglesey, off the north coast of Wales. Paulinus determined to destroy this focus of infection. Perhaps deceived by the appearance of calm within the Province, he rashly set out on the long journey west with his general reserve, the XIVth and the XXth Legions, with supporting auxiliaries. Apparently only token auxiliary forces were left at the center of provincial affairs.

The Druids are smashed but revolt erupts

Paulinus had scarcely completed the destruction of the Druid centers of worship on the island when word reached him, not only of the revolt, but of its initial success. Camulodunum, in his absence, was taken and utterly destroyed by the maddened Britons, with every inhabitant slaughtered. Worse, the IXth Legion from Lindum Colonia, arriving too late to save the city, was itself set upon by overwhelming numbers and suffered a severe defeat. Its commander, Petilius Cerialis, considered himself lucky to retreat toward his fortified camp at Lindum with his remnants. Two thousand replacements were later necessary to bring the Legion up to strength.

We may sympathize with the chagrin of Paulinus at being thus caught so far off base while energetically pursuing his mission. It has happened to others since. His vigorous reaction restored his reputation for competence and decision.

Bidding his legions to follow by forced march, and sending a top-priority message to Poenius Posthumus, commander of the IInd Legion at Gloucester, to rendezvous with the XIVth and XXth on the way, he took off with only a small mounted escort for London.

Posthumus, however, appears not to have possessed the combative instinct of his famous predecessor in command, Vespasian. He too had been apprised of the slaughter at Camulodunum and of the defeat of the IXth. Like other commanders of timorous and vacillating temperament before and since his time, he found it easy to discover many reasons adequate in his own mind for delaying obedience. When the XIVth and the XXth, moving at top speed along the Roman Road now known as Watling Street, reached the rendezvous —probably the junction of Watling Street with the Fosse Way, in the Midlands near the modern Birmingham— there was no sign of the IInd to give them cheer. With probably only those profane comments of disgusted resignation with which commanders over the centuries have endured such failures of their colleagues, the two tribunes pushed on.

Age-old dilemma of commanders presents itself

Paulinus, in the interim, had reached London. There he learned that Boadicea and her horde, after chasing Cerialis and his weakened IXth toward Lincoln, had reversed and were moving south. Both London and St. Albans were without adequate defenses or troops to man them. Paulinus was faced with one of those excruciating decisions which only the suppliant terror

of a defenseless civil population can bring to a commander. The choice, however, was clear. Only the legions, by bringing the enemy to battle in the open where discipline, training and tactics could play their powerful roles, could save the Province. London and St. Albans (Verulamium) were abandoned to their own insignificant defensive resources. We may assume that those who could, fled.

Both cities met the fate of Camulodunum. London first, then St. Albans were destroyed and every inhabitant put to death. Heady with victory, and loaded with spoils, Boadicea's forces went in search of the legions of Paulinus.

At some unknown point, probably north and west of London, Paulinus elected to give battle. All in all, as a result of the non-appearance of the IInd, he had probably not over 15,000 troops including cavalry and auxiliaries. Boadicea's fighting men are put at 80,000, but were not only deficient in discipline and control but were encumbered by long wagon trains, carrying families and the booty of three cities.

Matters of great moment hung upon the issue. For Boadicea and her angry Britons, the puny force so defiantly confronting her represented the last decisive element of Roman power on the island. Wiped out, the IInd, ingloriously idle at Gloucester, and the remnants of the IXth at Lincoln could be handled separately, and the way to hegemony over all the island tribes, now, if temporarily convinced of the need for unity, was open.

No quarter—the Legions must conquer or die

For Paulinus and his grim legions the issue was reduced to that lowest common denominator which has ever, *in extremis,* proved a catalyst in battle: they must conquer, or die.

The battle joined, with the disciplined skilled troops facing the human tide technique even as we have recently in Korea. Paulinus proved himself, whatever his strategic shortcomings, a superb tactical commander. In rapid succession sharp probing attacks against the British line produced disorder in the swarming masses. Small groups, cut out from the mass, were quickly wiped out by the application of superior force at a single point. Slowly the Britons were pressed back against their wagon train, indeed against their horrified wives and children, losing with every

constriction of space both the ability to re-form and to wield their weapons.

The result was bloody and sustained slaughter. The Roman soldiers, no strangers to mercy in less crucial battles, were steeled in their work by memory of the atrocities these adversaries, now helpless and within reach of each thrusting gladius, had perpetrated at Camulodunum, at Lundinium, and at Verulamium. Many of the higher ranks must have lost wives and children in the destroyed cities. Contemporary authorities, possibly exaggerating, placed the total British losses at 80,000, against a cost of 400 dead Romans. Some certainly escaped, including Boadicea and her entourage for long enough only to realize her hopeless situation. Death, by suicide or at the hands of her attendants, followed within a few days.

One further casualty of the battle may be noted. Poenius Posthumus, at Gloucester, hearing the news, and probably under blunt instructions to appear before Paulinus with an explanation of his conduct, chose rather to fall upon his sword.

Terrible vengeance—and a restraining hand

Paulinus, sweaty and blood-streaked, surveying the carnage, can hardly be blamed for deciding to follow up with a further lesson in the fatal futility of rebellion. For him it had been, as Wellington was centuries later to observe of Waterloo, "a damned near thing." He had almost lost a Province. Perhaps even worse, had the day gone against him, he would have sacrificed four legions, thus outdoing the execrated Varus of a generation earlier. Nor could his conscience have sat easy, for his imprudence in stripping the Province of reserves for his expedition against Mona, in view of its near disastrous results, was likely to be coldly appraised at Rome. He determined to make such an example of the Iceni as would, while memory lasted, operate to restrain other recalcitrants.

The lands of the Iceni and of the Trinovantes were swiftly laid waste, their towns burned, and their survivors, where not dispatched, sold into slavery. Total extermination might have ensued had not a Roman come to the aid of the miserable remainder.

Julius Classicianus, Procurator of the Province, was a Treasury official with his own channels to Rome. He may well have looked on in horror while the military arm went about destroying the sources of tax revenue as well as the inhabitants who would pay it. He may as well have been moved by the simple compassion by no means missing from the character of many educated Romans. He may well have known that putting down a rebellion with firmness is one thing and creating a long-enduring embitterment in the survivors quite another. In any case, he protested to Rome, urging clemency and help in reconstruction. The issues between him and Paulinus bear similarities to those so furiously debated after our own Civil War.

His arguments found friends in Rome. They were probably reinforced by the furious protests of other theater commanders over the reinforcements Paulinus called for, and which could only come from the other frontiers on the Continent. We have heard these protests in our own day.

In any case, Rome appears to have sent out its equivalent of an Inspector General. The investigation and report, while supporting the views of Classicianus, spoke well of Paulinus. The quiet solution was to relieve Paulinus with honor, and to replace him with a military governor of more lenient aspect. We may note the Roman acceptance of the principle that as there is no substitute for victory, so victory obtained excuses any number of earlier errors.

(This is the first of two articles on the Roman conquest of Britain)

THE HEADQUARTERS SOLDIER AND HOW TO KEEP HIM IN THE ARMY

PFC SPECIALIST

To retain the specialized skills of the headquarters soldier we must recognize him for what he is: a man whose motivations, for better or worse, are usually more sophisticated than those of the field soldier

CAPTAIN Little, in "Headquarters Soldier" [November 1956], must have been speaking from the viewpoint of the headquarters company commander or section chief. As a former headquarters soldier, I would like to make a few observations from the opposite side of the fence.

To establish my qualifications—and biases—for speaking on the subject, I should say that I was drafted shortly after finishing college. After basic training I was assigned directly to a combined post and division staff section. I worked there for the rest of my two years of active duty, and at various times was assigned to an SU, a division headquarters company, and a line company (on special duty to my section from the last named). During that time I had ample opportunity for observing both headquarters troops and their commanders. What I will say concerns primarily drafted men who were assigned to headquarters by virtue of their civilian technical or administrative training.

Generally the headquarters soldier is a specialist with from two to six years of college. He probably came from a moderately well paid job, and from a fairly high level of society. He looks at the Army more objectively than do his contemporaries in the line companies, and considers the military establishment a necessary evil. I say "necessary evil" not in a derogatory sense, but rather in the sense that while it would be nice indeed if everyone loved his fellow man, the world is not like that and unless we maintain a strong deterrent force we'll get stepped on.

Another characteristic of the headquarters soldier is his seemingly caustic and cynical attitude toward the Army. In many cases, however, this is nothing more than a cover. For, whether rightly or wrongly, he considers the usual type of *esprit de corps* rather juvenile; he thinks the vocal expression of patriotic sentiments is "just not done." In reality, though he is hesitant about admitting it out loud, the headquarters soldier has more feeling for his country and his Army than he shows.

THE headquarters soldier, contrary to popular opinion, is not lacking in *esprit,* but has it in a different form. His is not the *esprit* of parades, bands and flags, but rather in the ability of his unit to keep the administrative and technical sections of his post or division running smoothly and efficiently. He judges people and groups by their ability to perform their jobs. And in spite of the fact that it is most distasteful to him, he also recognizes the necessity for military courtesy and discipline. He knows that to function an army must be autocratic, even though it irritates him immensely.

PFC Specialist is the pseudonym of a former headquarters soldier, now editor of an industrial publication, who has applied for an Army Reserve commission.

What about his commanders? What type of man does it take to maintain that delicate balance between military and civilian abilities necessary to deal effectively with this type of soldier?

The section chief sees headquarters soldiers the most, and bears the greatest responsibility for using their abilities. There are several types of section chief. One says: "They are enlisted men; I am an officer. Therefore they are incapable of independent thought and action, so I must guide them in every step and allow them no responsibility." This type of officer is in the minority in the U. S. Army.

His opposite is the officer who is somewhat awed by his men and pampers them, gets them off every detail and becomes overly familiar. From the standpoint of accomplishment of mission, this type is worse than the first.

The ideal section chief says: "I am a professional soldier. These men are specialists in their fields. I insist that they respect me for my abilities as a soldier and that they follow the rules of military courtesy. In return, I must accord these men the respect for their specialty which they show they deserve." This type commands without condescension, and as he gives respect, so he gains it in return.

The officer who has what may be one of the most difficult jobs in the Army is the headquarters company commander. He also comes in several varieties. There is the type who completely disregards the sections, taking men as he *thinks* he needs them. He considers his men inferior, and by so doing gets a commensurate amount of work from them.

His opposite is the commander who lives in unholy fear of the sections, and lets the maintenance of his company suffer rather than take men from the sections as he *does* need them.

As in the case of the section chief, the ideal lies somewhere in between. To maintain his unit the headquarters company commander must have men. His best method for obtaining them is not by taking men arbitrarily from the nearest barracks, but by coordinating his activities with the section chiefs. He can usually do this because, much as we think ourselves indispensable, few if any staff sections will fold up because they must do without the services of one or two men for a short time.

UNFORTUNATELY, the complaint that the headquarters man is an incomplete soldier, so far as military skills are concerned, is a legitimate one. The nature of any future war will probably be such that even headquarters soldiers will come into direct contact with the enemy at one time or another. As things stand now, the headquarters soldier is woefully undertrained for this eventuality. Therefore, in order to insure the suvival of the individual and his unit, the amount of training in military subjects must be increased.

By now you'll be asking: "What will happen to the post and the division?

They won't be fed, they won't get paid, they won't be supplied! You can't take men away from their jobs!" I've asked the same things myself. However, a training schedule can be worked out whereby not all the men of a section are taken at one time. It will not be necessary to train them so they can hit a dime with a recoilless rifle at a thousand yards, but they should be taught at least how to operate and fire individual and crew-served weapons.

The same is true for physical training. A half hour or forty-five minutes each morning will not, contrary to the complaints of participants, bring the post to a standstill.

Obviously, the headquarters soldier is not going to like this sort of training. He'll grumble, but if you lay it on the line that it's part of the game, and that it may even save his life some day, he'll accept it. You may say this showing of respect and explanation of reasons is nothing but mollycoddling. You may be right. But the primary interest of an officer is the accomplishment of his mission. If that mission is the utilization of headquarters troops with maximum efficiency, this is the best way to do it.

MY FINAL point is this: If these men are valuable, how keep them in the Army? The answer, unfortunately, is that you probably can't—for two basic reasons. The first is a financial one. When a man can get four or five times the pay in a civilian job for the same work he did as a PFC or SP3, you can't expect him to remain. The second reason is an intangible, but just as important: the matter of social standing and prestige. Although he will work for a good officer to the best of his ability, this man is still on the lower end of the military social system. It's a sort of impasse: you can't change the system and have an effective army, and you can't keep the system and retain your highly trained but lower-ranked enlisted men. You can't promote them to the higher enlisted grades rapidly without engendering bitterness in the field soldiers, whose specialties are perhaps more valuable than those of your headquarters men.

A partial solution may be found in the reserve components. Although the Army cannot retain the skills of these men on a full-time basis, they can be used part-time and be readily available in a reserve unit.

THE job of selling your specialist on the Army Reserve is difficult but not impossible. It is not done with posters and lectures, but by leadership exhibited to these men while they are still in service. Leadership of quiet capability rather than spirited bombast will show them that their special abilities are appreciated and can be utilized. Convinced that they are needed, and can make a material contribution to the service, they will be more receptive to the idea of participating in the Active Reserve.

The headquarters soldier is proud of his ability in a special field. Respect and recognition of those abilities will gain for the Army respect in return with full use of those talents while he is on active duty, and the partial retention of his services in the Active Reserve.

THE MONTH'S READING

Nuclear Blackmail

EUGENE RABINOWITCH
Bulletin of the Atomic Scientists
December 1956

The truth is that the development of the two present conflicts [Hungary and the Middle East] has thrown a blinding light—like a lightning at night—on the new and terrible reality created by the advent of A- and H-bombs and of long-range missiles. The first fact, standing out in bold relief, is the present (and future) paralysis of the West in the face of events such as the ruthless Soviet suppression of the Hungarian insurrection. In the past, the West would have been able to use, in a similar case, the threat of war to support diplomatic pressure, and the ultimate *ratio regis*—resort to actual war—if pressure proved insufficient. At the present time, this possibility does not exist, whether we are inferior, equal, or superior to the Soviet Union in air-atomic arms—because atomic war would only mean mutual destruction, in which those to be helped would be destroyed together with their oppressors and their would-be protectors.

Atomic weapons are good for *deterrence*, but they also are good for *blackmail*. That the Soviet leaders are fully aware of this fact is clearly revealed by the letters which Bulganin sent to Eden and Mollet on November 5. With brutal frankness—for which we may be grateful—Bulganin threatened England and France with atomic destruction, reminding them of the fact—often emphasized in the *Bulletin [of the Atomic Scientists]* (but half-forgotten in Europe and America in the euphoria produced by the post-Geneva "moderate" Soviet foreign policy)—that Western Europe is a practically defenseless target for Soviet air-atomic attack, in which intermediate-range missiles (IRMs) with thermonuclear warheads could be used tomorrow, if not already today.

There seems to be one way of minimizing this threat and the consequent Soviet capacity for diplomatic pressure. This is immediate restoration—and further perfection—of the now badly shaken unity of the West (whose breakdown has been greeted with a truly frightening enthusiasm by Mr. Nixon). In the face of Western disunity and uncertainty of an immediate and concerted reaction, there is a terrible temptation for the (present or future) Communist leaders to assume that certain types of local aggression —let us say, the overrunning of Austria, or even an attack on England, will not produce automatically a full reaction from the United States; or that certain countries of the West can be successfully intimidated or blackmailed, since they cannot be certain of all-out and immediate American reaction—any more than Hungarians could count on our readiness to unchain the fury of reciprocal atomic war to support their struggle for freedom.

As long as the world cannot be truly united, an indissoluble unity of the non-Communist West provides the best available security against Soviet political pressure and the risk of an ultimate miscalculation of the kind which unleashed the two world wars and the Korean war, and in which lies the greatest danger of the outbreak of a third world war.

The frankness of Bulganin's threat to England clearly reveals the deadly urgency of a new, common Western policy and strategy. In the presently approaching—if not already existing—state of mutual US-USSR air-atomic deterrence, the strategy used when this deterrence was a one-sided weapon of the United States is not adequate. Among other things, this new situation calls for an all-out effort to achieve the recently neglected creation of a Western armed force able to match the Soviet army on the continent of Europe and in the Near East. It also calls for an agreed and clearly proclaimed policy and strategy of answering local pressure or aggression—a policy of "graduated deterrence," which has been discussed in the last few years—undoubtedly also by the highest Allied military planning groups—but on which we obviously do not have —and badly need—internationally agreed and generally understood decisions.

And *ceterium censeo*—the world needs a bold and imaginative American policy which, while preserving and strengthening the Western unity, will show the way to a moral and organic integration of all mankind in a single community. There is no better—perhaps no other—way to initiate this policy than by deciding and proclaiming our own readiness to participate in the submission of national interests to overriding interests of mankind as a whole.

An Infantryman is an Infantryman

GENERAL SIR RICHARD N. GALE
British Army
General Military Review
October 1956

The paragraphs that follow are taken from Sir Richard's article, "Infantry Today and Tomorrow," which appears in the first issue of General Military Review, *published in four languages: French, English, German and Italian.*

The simple thing to remember is that an infantryman is an infantryman. Over-mechanize him and he becomes a hybrid, something between an armoured car and a tank: he is certainly not an infantryman. Once he loses the main characteristics of an infantryman he loses what he cannot afford to lose: his individuality. An infantryman is a soldier who fights on his feet, with weapons which he can handle and, as a general rule, carry himself; for purposes of discipline and cohesion on and off the battlefield he is organised into battalions and companies. He can ford

rivers, he can swim, he can climb mountains, he can stand all the rigours of arctic and tropical climates, he can move through jungle and across deserts. He can be transported by air, by sea, by rail, by motor vehicle, but he fights on his feet; his real endurance is the length of time he can stand up on his feet.

* * *

There is much talk of air superiority. It is of the utmost importance and each side will fight for it. It must, however, as a factor be viewed in a sound and reasonable perspective. I do not believe that armies without air superiority are lost. Indeed, the whole teaching of the last war showed the reverse to be the case. In the early days, in the Western Desert and in North Africa we certainly did not have it: but we fought for it and it was not until we gained it that we could really turn to the offensive. The Germans lost it, but it did not prevent their fighting stubbornly on. It was the fact that they could never regain it that told their defeat. The skillful, most economical and worthwhile use of such air resources as one has will tell more towards success in the battlefield perhaps than any other single element.

I believe that severe air inferiority is one of the aspects of modern battle which might make for unnecessary panic. Therefore its impact on the infantryman must be understood. He must be trained how to regard it as well as how to react to it. Foolish disregard of it will do much harm. An over-dread of its consequences or too much faith in the immediate effects of our air superiority on the enemy must be guarded against.

* * *

My next remarks concern armour. Memory is sometimes short and theory is sometimes sweet. A heavy tank still in action dominates the battlefield on that spot where it stands. A larger number of them merely extend the size of the spot. If the theorist tells you this is not so, disbelieve him. Tank strength is a factor in the conduct of modern battles which you cannot ignore. The correct handling of this potential force should dominate tactical thought. As a corollary the study of the antidote to it is of considerable importance.

* * *

The whole alertness of a front, however wide, ultimately turns on the infantryman. By day or by night, in fog, in rain or in snow, it is he who stands sentry and guards the front. The front crumbles when infantry crumble. The front holds when infantry hold.

* * *

. . . There are, however, other wars not global wars; sometimes international as in the case of the War in Korea, sometimes national as in the case of Indo China and Malaya. Indeed scarcely a year has passed since 1945 that has not witnessed fighting on a considerable scale. There seems to be little end to this kind of strife. Certainly few, if any, of these small wars could have been or were foreseen ten years ago.

In all of these conflicts the role of infantry as the *Arme Blanche* is unchallenged. When infantry has allowed itself to become reorganized for the theoretical atomic war it has found itself ill equipped and improperly trained for its traditional role.

My firm belief is that either in the Cold or in the Hot War infantry should retain its classic role, and not allow itself to be reorganized on a theoretical conception which ignores both the lessons of the past and the dictates of common sense.

Infantry fight by battalions. Battalions must not be too weak. The strength of infantry rests on the strength of the battalion. There must be sufficient men in the battalion to provide the sentries, double at night; to provide the patrols; and to have sufficient men to ensure that the battalion as a whole does not get tired out by having too many men, for too many nights, doing too much sentry and too much patrol work. Undermining the rifle strength of a battalion, on the grounds that it possesses automatic weapons, a popular thesis in some quarters, is dangerous and completely ignores the grim realities of fact. This same consideration bears on the value of and extent to which a battalion can afford frills. Signal communications are grand; but a lot of signallers sending messages to companies that are too weak to do their job is but cold comfort. Transport is essential; but a lot of drivers sitting in transport lines while a grim fight in the front is in progress is waste of manpower. Carriers, wasps [mobile flamethrowers], mortars are excellent; but if they are there without sufficient men in the rifle companies they will look silly. The tendency to add new weapons to the battalion, to build up big efficient support and headquarter companies must be watched, if this infringes too much on the backbone of the battalion, the rifle company, for whose assistance really they only exist.

* * *

Good infantry are essential today as before. They must be optimistic and have faith in themselves. They must be physically fit, for the infantry soldier has got to be a robust man. If he is not so, he cannot do what is wanted of him.

Soldier's Mail

KENNETH P. WILLIAMS
***Lincoln Finds a General*, Vol. IV**
The Macmillan Company, 1956

. . . soldiers in the lines about the invested city [Vicksburg] would also be writing of visits from the commanding general, one of the greatest experiences a soldier can have. Sherman, in a letter to his brother on April 3, in which he castigated [Thomas W.] Knox and other reporters for their misrepresentations, said: "It is absurd to say these correspondents relieve the anxiety of parents, friends, &c. My soldiers write constantly and receive immense numbers of letters." This he added, was right. While there had been some good reporting of the campaign behind Vicksburg, nothing any correspondent wrote of the battles or the siege could equal the letters from the trenches. A reporter might tell that Grant had slept at Jackson in a bed occupied the night before by Joe Johnston. Though the fact was amusing, it was unimportant. But not unimportant was a letter which told that Grant had talked with a son, a brother, or a husband.

The Men Who Choose the Ground

Colonel Julian D. Abell

ONE AFTERNOON IN 480 B. C., on the shores of an inlet of the Aegean Sea, the great Persian army of Xerxes had assault after assault repulsed with terrible losses, and still the bravery and strength of the Spartans under Leonidas showed no signs of wavering. The pass at Thermopylae seemed blocked for good. But then came a man who possessed special information, who knew a way around the pass (it was probably fourteen yards wide in those days). The consequences are classical history: a forced night march, encirclement, Persian victory.

The man who brought the information about the pass to Xerxes was a terrain specialist. Such men have contributed to victory throughout war's long history. Some American soldiers will tell you about the French girl in World War II who took off her shoes, daintily elevated her skirts, and waded a stream in a shapely and classically French demonstration of fordability. She was a terrain specialist. Perhaps at the other end of the scale sits the bookish, aging Von Moltke the Elder, poring over maps and textbooks in libraries, spending six years on the routes into Bohemia, certain that one day this terrain information would help him topple the Hapsburg empire.

What is a terrain specialist?

Today we have the Engineer Terrain Detachment, a newcomer to the intelligence organization of our field army. Like Von Moltke, it collects and evaluates all types of terrain data; like the French girl, it disseminates information and serves as consultant and demonstrator on specific problems in military operations. The ETD is a group of professional specialists, experts in a number of fields of engineering and earth sciences. It has an authorized strength of six officers (captain to lieutenant colonel) and five enlisted specialists.

The duties and responsibilities of officers and men assigned to the terrain detachment reveal both the breadth of our Engineers' area of interest and the variety of fields in which they operate. The detachment commander, responsible for all of his unit's work, is no one-field specialist. He must be concerned with both the natural (basic environmental) and the cultural (man-made) terrain features, and with both general and specific problems. The other officers and the enlisted men are specialists, with work generally limited to defined fields.

Varied specialties

The first officer under the CO is his utilities engineer, who is responsible for intelligence on urban areas, a topic that brings together disparate elements of engineer interest. An urban area is a composite of features and facilities that can affect military operations: warehouses and power plants, water and gas works; plants for disposal of garbage, trash and sewage; buildings where troops can be quartered and others where equipment can be stored or repaired. Every large city

Since an army fights on the ground it needs specialists who can give the commander the low-down on the ground that lies ahead. The outfit that does it is the Engineer Terrain Detachment

An Engineer Terrain Detachment officer digs into Arctic permafrost

Colonel Julian D. Abell, *Corps of Engineers,* graduated from Indiana University in 1927 and from the Military Academy in 1932. During World War II he commanded an engineer topographic battalion and served in Seine Base Section headquarters. He has been Commanding Officer, Army Map Service, since September 1953.

has these and many more. However, the utilities engineer's responsibilities are not confined to the city limits. He is interested as well in power plants located in remote canyons, in transmission lines and pipelines that stretch over many miles, and in industrial installations of all sorts, wherever located. He has, of course, a special interest in plants that produce materials used by engineer troops: bricks, I-beams, glass, lumber, and the like.

The second operating officer is the hydraulic engineer, whose duties extend beyond structural and civil engineering into the field of geography. His broad area of responsibility reflects the broad interest of the Army as a whole in bodies of water, for they can be barriers to movement as well as avenues of transport. As an engineer, the hydrologist is concerned with structures that control and regulate water: dams, dikes, levees, locks, gates, bridges, tunnels. He is also concerned with weather and climate, drainage, water resources, coastal conditions and landing beaches. These things can influence military operations in innumerable ways: snow may block roads, floating ice may ruin bridges, floods may destroy equipment. An adequate supply of good water helps maintain a unit; lack of water can stop it in its tracks.

Closely related to the work of the hydrologist is that of the geological engineer, the third officer in the detachment's TOE. He collects information on various phases of geology and geography like land forms and vegetation, and he estimates the effects of these things upon military operations. He selects potential sites for airfields, drop zones and landing zones. He analyzes terrain to determine where to erect defenses and fortifications. This involves data on soils and rock types, as well as on slopes and fields of fire. The geologist is also responsible for intelligence on natural construction material, ground water, mineral resources, and on phenomena like earthquakes and volcanic eruptions.

Much of the intelligence assembled by the geological engineer and the hydraulic engineer is also used by the soils scientist, another member of the ETD. This officer analyzes soils, together with slope, vegetation, drainage and other factors, to determine how they affect cross-country movement. Accurate information on this topic is, of course, valuable to all arms and services, but particularly to armor units.

The last officer of the detachment is the highways engineer, an incomplete title since he is also responsible for intelligence on railways. The engineer interest in these fields centers on the physical characteristics of highways and railways, but not on traffic, rolling stock or operation. Structures like vulnerable and restricting bridges, tunnels, ferries and fords are his special interest.

The work of the detachment's six officers is supported by five enlisted men, all specialists. Two SP1s are terrain analysts, one SP3 is a topographic draftsman and two others are clerk-typists.

The need for basic terrain intelligence

The engineer terrain detachment was created largely out of the experiences of World War II and the Korean conflict. Theater and army headquarters had no personnel trained and equipped to compile basic terrain intelligence. Thousands of men could point out good places to dig foxholes, but there was no one whose specialty was the siting and planning of large underground installations. Thousands knew whether tanks could cross ground that everyone could see, but no one could reliably predict conditions encountered in a cross-country movement in an area a hundred miles away. Basic engineer terrain intelligence was not assembled. It came in bits and pieces, and it came slowly.

The gaging of a stream for depth, width, and rate of flow is a matter of interest to the terrain specialist

The ETD will provide the army G2 and the army engineer with intelligence that can be used in planning future operations. Its mission demands thinking ahead. Its officers are interested in what is happening today only as a clue to what may, can, or will happen six months or a year from now. The detachment gets engineer information from textbooks, magazines, professional journals, encyclopedias, guide books, maps and town plans, and from documents that never see publication; from reports of attachés and other intelligence media; and from accounts of interviews, interrogations and visits. Finally, it gets information directly through measurement, inspection, examination and field trips or reconnaissance.

Intelligence for today and tomorrow

The information assembled by the ETD is evaluated and interpreted. In short, it is transformed into intelligence that can be used by the army G2 and the army engineer. The de-

tachment's studies can take various forms: some are in narrative, many in collections of graphic material. In preparing their material, officers can use the engineer topographic battalion assigned to army or theater headquarters. Besides the usual maps, overlays, overprints, drawings and the like, used to picture the terrain, tables are widely used for data on individual structures and facilities. Along with profiles and sketches they also give information on selected natural terrain features. The studies prepared by the detachment, together with related information supplied by the army's MI battalion, form the basis of the terrain estimate of the army G2.

The engineer terrain detachment has had predecessors. Specialist teams of various types have existed before now. During World War II, for example, civilian specialists from the Military Geology Branch of the U. S. Geological Survey were assigned to several major headquarters. The creation of the ETD, however, represents the first attempt to provide orderly and systematic compilation of terrain intelligence within the field army. The first terrain detachment was activated at Fort Belvoir in 1952 and received its basic training there. Since then other units have come into being. Today six detachments are producing engineer intelligence in overseas theaters and in CONUS.

An ETD at Sagebrush

Exercise Sagebrush, held in Louisiana in 1955, afforded an opportunity to demonstrate how the ETD assists the headquarters of a field army in a simulated operation. In January 1955 the 517th Engineer Terrain Detachment was directed to participate in this maneuver. Its first problem was a hydrology study of a portion of the Red River, requested by maneuver director headquarters. This was followed by thirty-two other studies and reports on a variety of topics. Two of these studies—dealing with the Colorado River of Texas, and the terrain of the Sagebrush maneuver area—prepared from source material available in Government agencies, were completed before the 517th ETD left Washington in July.

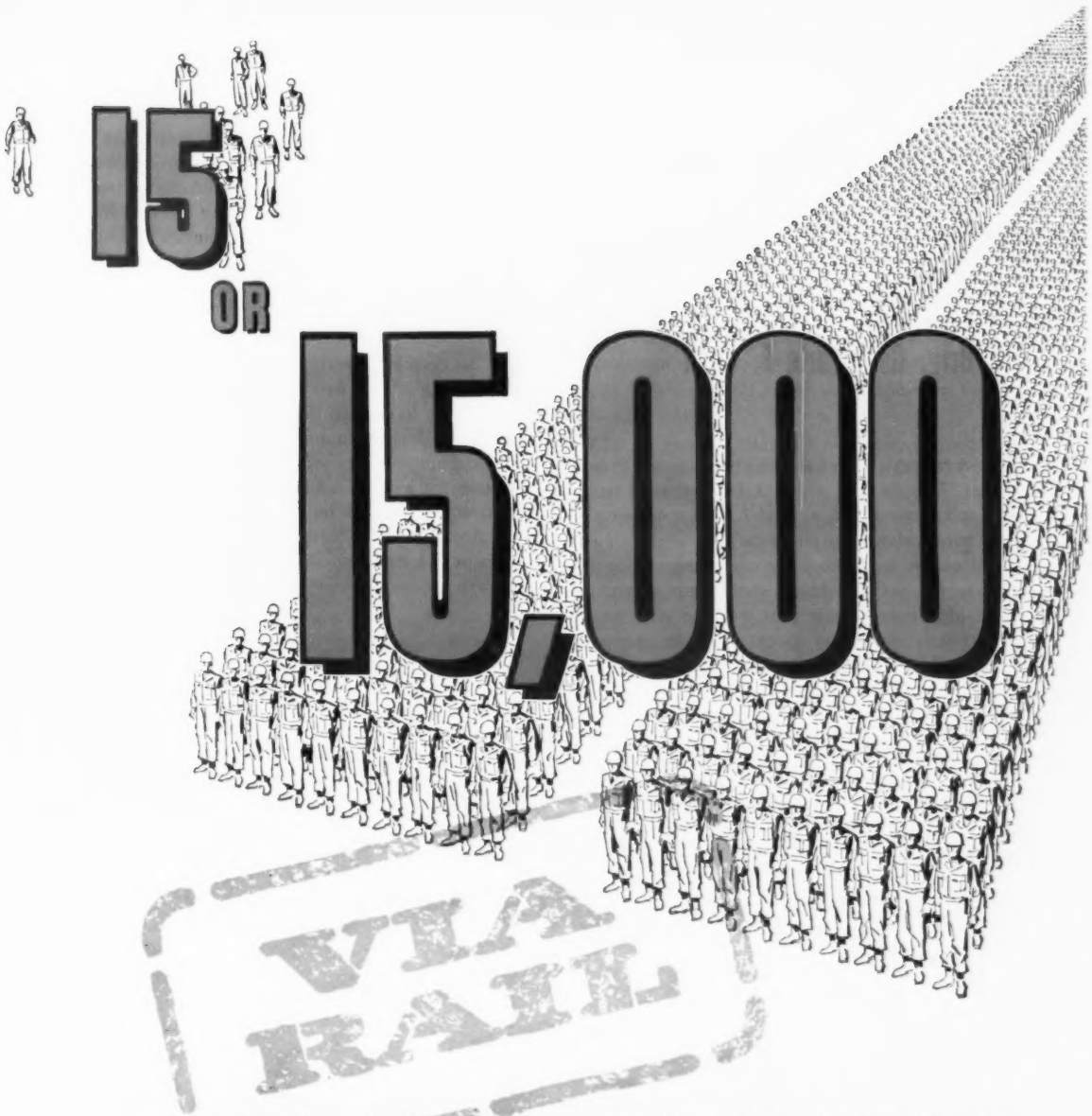
At Fort Sam Houston, where the 517th ETD worked closely with and used the facilities of the San Antonio field office of Army Map Service, scores of questions were answered, touching on camouflage, drop zones, inundation, levees, young-tree plantations, road and bridge maps, crossing sites, atomic targets, use of submarines on the Red River. The detachment prepared a detailed supplement to its original study of the maneuver area, and eight other reports, including one on sites suitable for Ninth Army's command post.

In October the 517th ETD headed for the maneuver area for more studies and reports, and much consultation on engineer topics: bridge demolition, obstacles and barriers, breaching of dams, field fortifications, port blockage, bivouac areas, and airfield sites. The work was now more directly based on the ground, from reconnaissance and observation. The maneuver tested, as all maneuvers are designed to do, the abilities and skills of the officers and men of the ETD, as well as its TOE. Are the right numbers and types of personnel allotted? Are there enough of the right kinds of vehicles? Is there enough equipment? How good is it? Administration and housekeeping? Liaison with army G2 and army engineer? What needs changing? These, of course, are questions that all army exercises try to answer in one way or another. There will no doubt be changes in the TOE, for an army that fails to review and alter its tables is not moving forward.

The tests provided by Sagebrush proved one thing conclusively: the idea of the engineer terrain detachment is sound. There is a military need for the studies it produces, and for the intelligence it furnishes. The Engineers know that future war will require more and better terrain specialists than ever. Atomic weapons will force greater and greater dispersion, and the field army will be spread over larger areas. Fortunately, improved communications equipment will make this possible. In that future war, engineer intelligence of all kinds, directed, contributed, and handled by diverse officers, men and units, may not infrequently point the way to success in battle.

The Engineers expect a sizable contribution from their new terrain detachments.

Members of an Engineering Inspection team examine a piece of crevasse detection equipment used on the Greenland Ice Cap



Regardless of size (and equipment) military units move best by rail. Train travel is comfortable, convenient and efficient. Troops, their baggage and impedimenta move together and arrive together at destination. Only the railroads are capable of providing complete transportation for any movement...anytime...any size...in any weather.

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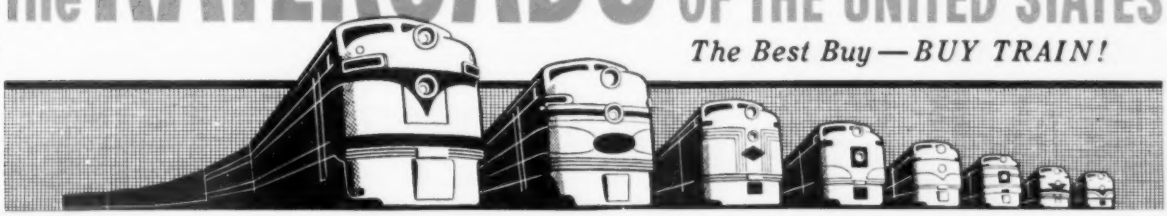

What's What With Transistors in the Army

Brig. Gen. Earle F. Cook

THE DEMONSTRATION officer at Army's Electronic Proving Ground spoke: "We are now going to demonstrate a tactical transistorized telephone repeater. First I shall speak over 18 miles of field wire without any repeaters."

He threw a switch and though he continued talking into the microphone the public address system was silent. Apparently what little energy came over the field wire was insufficient to activate the speaker system. Then he announced over the normal PA system that he would put three of the transistorized repeaters into the 18 miles of field wire. He threw another switch. Immediately his voice came loud and clear over the PA system: "I am now talking over 18 miles of field wire with three of the new transistorized repeaters in the circuit."

This demonstration, which actually took place recently, was significant because it was the first time troops were using and demonstrating a completely transistorized item of tactical communications equipment. At long last that little electronic device—the transistor—for which such a brilliant future had been predicted was taking its place in tactical communications equipment.

What is a transistor?

It has been eight years since the Bell Laboratories announced the making of the first transistor. During those same eight years there have been thousands of transistors placed in use commercially and hundreds more in use in specialized military applications. As yet, however, it is categorically correct to state that we have not transistorized our tactical communications equipments. Why all the delay, is constantly asked of the Army's SCEL (Signal Corps Engineering Laboratories). Perhaps the most concise answer is—reliability. No piece of modern military equipment can be considered effective if its

A new device with many advantages but lots of problems

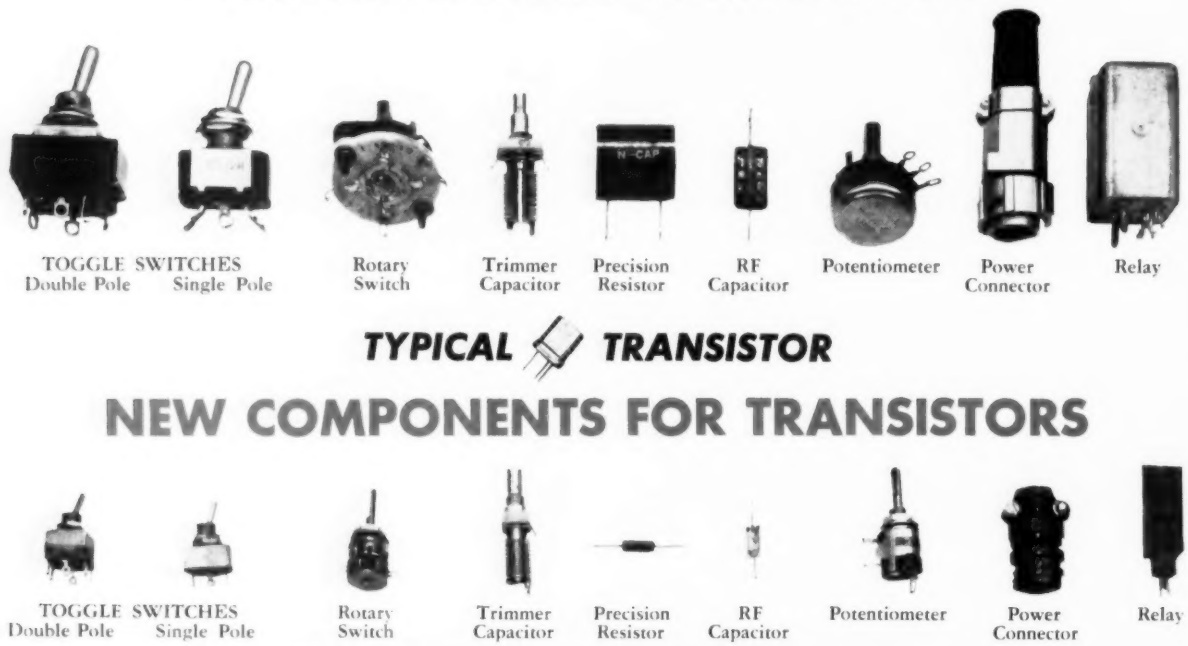

Figure 1. Conventional versus the new transistor components

electronic components are unreliable. But first let's look at a transistor. What is a transistor? What is it supposed to do? The transistor is a small crystalline semiconductor device. The name itself comes from the combination TRANSfer resISTOR. The "units occupy about one-thousandth of the volume, represent one-hundredth of the weight, and require about one-tenth of the power of the average type of radio receiving tube; yet they will perform many of the functions of vacuum tubes."[1] In addition to replacing or paralleling the vacuum tube the transistor opens new fields for the applications of electronic devices. To the layman, however, the transistor is merely some new scientific wonder which replaces the tube. Just recently an officer asked me, "Don't you just remove the tube and slip a transistor into its place?" That, in general, may be the idea; doing it is not quite so easy, however.

Advantages of transistors

The many advantages the transistor can offer as it comes up to expectation and is used in tactical communications equipment warrant careful consideration and some understanding by all military personnel. In a recent talk[2] Mr. S. E. Petrillo, Director of Engineering at Amry's SCEL, summarized these advantages when he said: "Inherently the transistorized system has the following distinct advantages over similar vacuum tube systems:

"(1) Lighter, more compact equipment can be designed.

"(2) Lower circuit voltages can be used. As a result portable military equipment can be designed requiring less weight and space.

"(3) Plug-in packages can be employed. Throw-away units now become economically feasible.

"(4) Transistors can be used in conjunction with printed circuitry techniques which lend themselves to automation, reducing equipment costs.

"(5) Mechanical problems of transistors compared to those of vacuum tubes are greatly reduced.

"(6) Transistor life expectancy appears to far exceed that of vacuum tubes.

"(7) In general, transistor reliability is expected to either match or surpass that of comparable tubes."

Each of these seven advantages can be documented fully and without difficulty. As illustrative of the expansion that can be given I offer this quote from "Irons in the Fire" in *ARMY* for November 1956: "Tests by General Electric engineers show that transistors have a much longer life than vacuum tubes. Some are operating at full power after 18,000 working hours, which is equal to eight hours a day for six years. Transistors are also rugged. Large numbers were fired from a mortar and between 60 and 75 per cent were capable of operating at full power. Minor modifications in manufacture are expected to raise that percentage significantly."

But if the military is to benefit from these advantages the transistor will have to prove its reliability while operating in a most stringent environment—that approximating combat conditions. The following criteria which are now prescribed for portable and vehicular tactical communications equip-

[1]Coblenz, A. and Owens, H. L., *Transistors: Theory and Applications*. New York: McGraw-Hill Book Co., Inc. 1955.

[2]Petrillo, S. E. and Moss, H., "Transistor Reliability and Military Requirements." (Presented before First Annual Transistor Symposium sponsored by Tri-Services Advisory Group on Electron Tubes.)

TRANSISTOR PART UNDER DEVELOPMENT AND APPLICATION	PHYSICAL & ELECTRICAL CHARACTERISTIC OBJECTIVES OF NEW TYPE	PHYSICAL & ELECTRICAL CHARACTERISTICS OF AVAILABLE CONVENTIONAL TYPES	STATUS OF DEVELOPMENT (1956)	PROJECTED AVAILABILITY DATE OF ENGINEERING TEST MODELS
1. Ceramic I-F Filters Communication Receivers Carrier Filters Frequency Traps Frequency Multipliers	Volume: 1/20 cu. in. (3 Disc Type) Skirt Ratio: 1.65/1 Voltage Ratings: 50V Temperature Range: -40° to 85° C Stability: .02% over temp. range Moving Parts: None (Fix Tuned) Frequency Range: To 12 MC	Volume: 1/3 cu. in. (I-F Trans F.) Skirt Ratio: 2.5/1 Voltage Ratings: 300V Temperature Range: -40° to 85° C Stability: .1% over temp. range Moving Parts: Adjustable Cores Frequency Range: Approx. 10.7 MC	Experimental Phase	1959
2. Ultra Miniature Film Capacitors General Radar, Communications & Weapon System Usage for LF Tuned Circuits, Coupling, Timing Circuits, etc.	Size: .025 ufds. in .03 in.^{3} Volume Efficiency: 1 ufd/in.^{3} Q: 700 Stability: Comparable To Conventional Mica Types Voltage Ratings: 50V Capacity Ranges: >.025 ufds.	Size: .025 ufds. in .7 in.^{3} Volume Efficiency: .036 ufds/in.^{3} Q: <50 Voltage Ratings: 600V Capacity Ranges: >.025 ufds.	Experimental Phase	1959
3. Miniature Audio Connectors Handsets & Headsets for Transistorized Eqpts. such as VRC-12, PRC-25 and others	Size: 1" x 7/8" D. Voltage: 60V Current: .25A Contacts: 5 Sealing: Sealed Mated & Unmated Type: Bayonet Coupling	Size: 3-1/4" x 1-1/4" D. Voltage: 60V Current: .5A Contacts: 10 Sealing: Sealed Mated & Unmated Type: Bayonet Coupling	Development Model Phase	1958
4. Variable Ultra Miniature Potentiometers General Usage in Small Portable Transistor Equipments	Size: 3/8" D. Power Rating: 1/10 W Styles: a) Shaft Control b) Screw Driver Control Resistance Range: 100 Ω to 50 x Ω	Size: 1/2" D. (SCEL Developed) Power Rating: 1/4 W Styles: a) Shaft Control b) Screw Driver Control Resistance Range: 100 Ω to 3 Meg.	Development Model Phase	1958
5. Miniature Metallized Paper Capacitors General By-Pass Applications	Size: 1 mfd. in .1 cu. in. Volume Efficiency: 10 ufds/in.^{3} Voltages: 50V Capacity Ranges: >0.1 ufd. Q's: Comparable To Conventional Types Breakdowns at Rated Volts: Negligible	Size: 1 mfd. in .4 cu. in. Volume Efficiency: 2.5 ufds/in.^{3} Voltages: 200V Capacity Ranges: >0.1 ufd. Breakdowns at Rated Volts: Moderate to High	Advanced Development Phase	1957

Figure 2. Selected items of Transistor Components Program

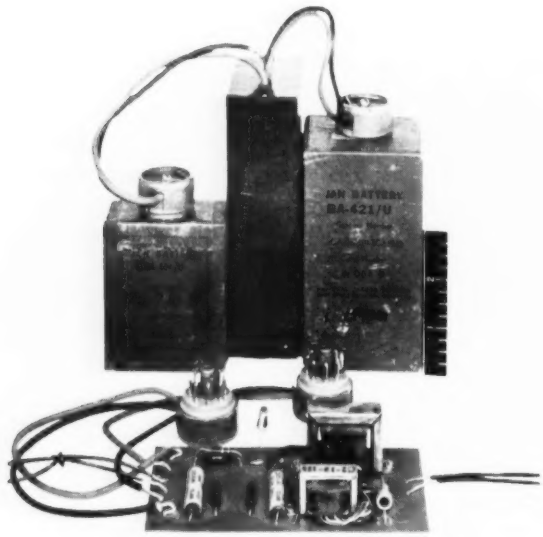

Figure 3. **Transistorized telephone repeater**

ment at Army's SCEL will give you some idea of what is required:

Frequency range—20-100 megacycles
Power—.5 to 50 watts (both audio and radio frequency)
Temperature—from –65 C to 100 C.

Transistors of the future promise to fulfill the requirements with such consistency as to make their employment in tactical equipment not only desirable but essential in the near future.

Development of associated components

Any application of the transistor necessitates the development of an entire new series of associated components if we are to realize the maximum overall gain in size reduction, weight reduction, and operating efficiency which the transistor art promises. If the transistor were used in conjunction with conventional size transformers, resistors, capacitors, and even batteries relatively little of the possible gain would result. And so a tremendous effort is being expended in this field of ultra miniaturization. Many problems remain to be solved, for these new components as well must meet military environmental specifications.

Programs for the development of these new components are not new. Since 1949 a continuing parts development program for transistors has been in effect at Army's SCEL. Those "conventional" military quality components most incompatible from size and performance viewpoints with the transistor were selected to be ultra miniaturized first; these oversized and overrated parts were the ones most likely to inhibit realization of the size and weight advantages of the transistors, and available funding was directed to resolution of these problems. *Figure 1* shows some old and new end item components that have resulted from this program. A full scale view of a transistor is included for size comparison purposes. Some of these ultra miniatures are now available from commercial sources and some are under mobilization tooling by Army's Signal Supply Agency.

The problem of reliability

A portion of the continuing transistor components program is exemplified by the five research and development items described in *Figure 2*. Here are given some of the more technical specifications which must be met before the program can be considered a success. In the third column of the figure will be found comparative data for similar conventional items.

Further, the reliability question is considered so important that in the transistor field the present program requires studies aimed at evaluating the characterization of reliability, to identify the mechanisms of reliability, and the development of techniques for avoiding and circumventing these mechanisms.

In short, we have to explore all aspects which limit reliability and find the ways and means to overcome these limiting problems. In considering these programs one can become involved in the questions of physics and chemistry of semiconductor surfaces, for example. Such discussions can become quite technical; a presentation of such problems is beyond the scope and purpose of this paper.

In addition, once the environmental conditions are met by components and by packaging there still remains the question of whether the circuits in which the devices operate will provide satisfactory margins to insure reliable operations. As early as 1952 in an article written at Army's SCEL entitled "Transistors and the Military"[3] it was stated: "availability of transistors, however, is not the only problem; applications experience has confirmed the difficulties that circuitry engineers were expected to encounter in utilizing these new devices [and] the immediate need is to develop a new circuitry 'know how' which for electron tubes took over a quarter century in its evolution toward current engineering practices."

But perhaps the most serious of our present problems is the question of effects that nuclear radiation may have on transitorized equipment. Some components including most present-day transistors are known to change operating characteristics immediately on exposure to radiation. Some components deteriorate rapidly if not instantaneously. Others show slow deterioration. In each case the deterioration may be permanent or temporary depending on factors about which we know little at present. There are extensive programs designed to investigate these phenomena but up to now tests with really definitive results are too few to be conclusive. New elements or compounds may have to be used for transistor and component manufacture as a result of these tests.

Field tests of transistorized equipment

Regardless of the many problems, at Army's SCEL the desirability of an early introduction of some transistorized communications equipment to the field for familiarization, if for no other reason, is well understood. And though it is true that tactical gear has not been transistorized, let me cite two examples in which the transistor is being used in equipment available for troop user tests. Both items are tactical. Each has afforded the engineer the opportunity to take some advantage of the compactness and other desirable characteristics of transistors, and has permitted the engineer to gain knowledge of circuitry techniques.

[3]Obenchain, I. R. (Lt. Col.) and Galloway, W. J. (Lieut.), "Transistors and the Military." Proceedings of the IRE, November, 1952.

Telephone Repeater-Comparative Data

Transistorized (Experimental)		Standard
TA-287		EE-89
6x6x3¼	size, inches	7x8½x9
4	weight, pounds	15
22.80	cost, dollars	91.40
90	battery life expectancy, days	10
1.15	battery cost, dollars	4.60

Figure 4

The first item is the transistorized telephone repeater used in the demonstration referred to at the beginning of this article. A total of 400 of these repeaters have been produced and issued. In addition to being tested at the Army Electronic Proving Ground, the device is being tested at Fort Bragg, in Germany, Italy, Great Britain, and Australia.

This device is a two-wire, two-way voice frequency repeater. It is unattended, portable and battery-operated, and is designed for installation in the center of each six-mile section of WD-1 field wire line. Successful conversations over thirty miles of field wire are possible when using five of the repeaters. This device automatically compensates for changes in line conditions; no adjustments or repairs are possible or desirable. Should trouble develop the device is thrown away and replaced. The only attention required is the replacement of the batteries approximately every ninety days.

Figure 3 pictures the transistorized repeater, and *Figure 4* provides some comparative information with the now standard repeater EE-89 which the transistorized repeater is expected to replace.

Why, you may ask, did Army's SCEL decide on a telephone repeater to be among the first transistorized tactical equipments? This hardly seems a glamorous device and it hardly appeals to the individual soldier. Well, it was done because the engineers had to learn to walk before they could run. At the frequencies at which the device has to work the transistor problem becomes one quite readily solved with available transistors. Also the repeater employs simple circuitry and a minimum of components.

You have probably observed in *Figure 3* that a number of components other than the transistor have not been ultra miniaturized. This is true but it is also a further reason why the repeater could be made quite readily. A further reduction in weight and size such as would result from ultra miniaturization would involve added costs and delays in getting the item into troop test. The initial use indicates that the device is about ready to take its place among standard tactical equipments.

Let's take a look now at the helmet radio. This is a glamorous device with great individual appeal. Up to now we have had no radio with which to equip the individual soldier. The helmet radio fills this void in our military equipments. It is the first piece of tactical radio equipment to make use of transistors throughout, and its production was delayed until industry produced a suitable transistor for use in the helmet radio's transmitter.

Further description of the radio to readers of *ARMY* is redundant as the radio was quite fully depicted in an illustrated short entitled "Talking Sense Through Your Hat" which appeared in "Irons in the Fire" in the September issue. The device was further discussed in the November issue by Lieutenant Colonel Robert B. Rigg, in his article "Soldier of the Futurarmy." The radio's performance predicts great use as its future; the transistor made it possible.

Fast pace of transistor developments

There are other transistorized items—many of them, including radio receivers, power convertors, multi-vibrators, frequency meters, binary counter units, data transmission circuits, in fact the entire field—in various stages of development. And the state of the transistor art is moving forward so rapidly that new types for new purposes are coming into being almost daily. It almost seems that before an item can be really developed some new transistor or component comes along to make the development obsolescent. This is perhaps one of the fascinations of this semi-conductor art, and it promises to revolutionize our tactical electronics equipment of the future.

And the military is not facing the problems on transistors alone. An industrial pamphlet, "Transistors—today and tomorrow"[4] summarizes the situation thus:

"The techniques used today for making a transistor, it is foreseen, will be refined in many respects over the years. As research uncovers more and more of the solid phenomena inhibited in various crystals, the versatility of transistors and related devices will continue to grow. Like the electron tube, which developed from the early diodes and triodes into a variety of forms to serve ever-widening applications of electronics, solid devices can be expected to expand in their own way into a diversity of applications. The transistor and its solid state cousins will, engineers believe, sometime parallel the role of the electron tube and sometime blaze new electronic trails of their own."

The military-industrial team realizes that our soldier of the future will need every scientific advantage that can be provided. It is most important that *you* realize what effort is being made to bring forth equipment which takes full advantage of all the transistor has to offer. We know we must transistorize our tactical communications equipments; it appears the change is just ahead.

[4]Department of Information, RCA.

Brigadier General Earle F. Cook was commissioned in the Coast Artillery Corps upon graduation from USMA in 1931 and transferred to the Signal Corps four years later. During World War II he was in Signal Corps Intelligence, and commanded the Army Security Agency in Europe. A graduate of AFSC and the National War College, General Cook now commands the Signal Corps Engineering Laboratories at Fort Monmouth, N. J.

TAKE A TACTICAL WALK!

SERGEANT FIRST CLASS FORREST K. KLEINMAN

IN our preoccupation with scientific training gadgets, formulas and gimmicks, are we neglecting the old and simple, but timelessly effective, tactical walk?

When I asked a number of junior officers and noncommissioned officers recently when they had last been on a tactical walk only a handful even knew for sure what I was talking about. None could recall participating in one since military school days. Yet there is no easier way to teach tactics, terrain appreciation and troop leading at every level from squad to division. And there is no more stimulating mental exercise to prepare troop leaders for the battlefield. The only training aids needed are terrain—any terrain—and imagination.

While it can be an elaborately planned affair with set situations, messages and simulated enemy action prearranged to occur in sequence at selected points, the tactical walk is one of the very few military instruction methods that can be conducted effectively without preparation. A competent and imaginative instructor can begin a tactical walk on the spur of the moment—anywhere. All he needs to do is scan the terrain, visualize a tactical situation, announce it to the class, and ask: "Now what would *you* do if—?"

Immediately every member of the class is compelled to *think* on his feet—to study actual terrain, make a hasty estimate of the situation, arrive at a decision, and describe his actions and orders. What expensive training gimmick ever accomplished more during the first ten minutes of an instruction period? How many elaborate presentations on stage and film accomplish much less in an hour?

The mental exercise stimulated by this impromptu, on-the-spot method closely resembles that required of troop leaders in combat. More frequently than not, tactical decisions in battle are made on the spur of the moment and on terrain that little resembles familiar maneuver grounds. As Lieutenant General Robert N. Young once remarked: "There is no such thing as ideal terrain for conducting tactical training. In combat, you fight the enemy where you find him!"

While at Taegu, Korea—in 1948—a company commander conducted a tactical walk that began in his squad rooms! Within two minutes the barracks was under simulated attack by guerrillas. His opening situation prophetically assumed that the North Koreans had just invaded South Korea!

His first session was devoted to hasty defense organization of the building and adjacent area. Then the class went outdoors, where it encountered and solved the tactical problems of an advance-guard company for the parent battalion's hypothetical movement from Taegu to Taejon, eighty miles away.

Two months later the tactical walk had covered only the first five miles in semiweekly instalments, but the foot sloggers were many wrinkles wiser in the ways of combat. In logical continuity, they had progressed from rifle squad in attack to rifle company reorganization on the objective, applying the tactical principles involved to terrain that varied from Taegu's urban area to rice paddies and rugged hills.

Each day, while en route to where the previous session had left off, the instructor paused occasionally to review problems the class had met and solved along its route. After each three-hour period he invariably gave the class a final situation to sleep on.

Where previous attempts by the same instructor to teach tactics with maps, sandtables and chalk in classroom had aroused only perfunctory interest, the tactical walks evoked an enthusiastic response. Once-dusty manuals became dog-eared from off-duty reading by lieutenants and sergeants with arguments to settle or points to prove. On weekends, members of the class could be seen trudging along the projected route of march, scanning the terrain with thoughtful eyes.

A platoon sergeant came up with an illuminating testimonial: "I never used to think about tactics much except when the outfit was actually training in the field or on maneuvers. Now, every time I leave the barracks I find myself looking and thinking of the ground I'm on in terms of combat. There isn't a hill or a village for miles around that I haven't attacked or defended in my mind a dozen times."

People who had the privilege of serving under Colonel Thomas H. Monroe in the 15th Infantry back in 1941 never knew when or where "Uncle Tom" would turn a casual conversation into a tactical walk. In self-defense they soon developed the habit described by the platoon sergeant of viewing terrain in the light of its tactical possibilities. This skull practice proved invaluable later in combat, and many say today they have not lost the habit.

The scope of instruction and the area of terrain that can be covered by a tactical walk are by no means limited by the marchers' pace. Put wheels under them and the tactical walk becomes a tactical ride—an effective way of instructing, reviewing or testing in the tactics of all arms.

For Reserve and National Guard units the weekend tactical walk or ride is an effective way of overcoming the handicap of limited time, terrain and facilities for realistic tactical training. It should be especially useful at summer camps for units with a high percentage of officers and noncommissioned officers. (We've all seen soldiers sitting on hillsides at summer camp watching tactical demonstrations in miniature by instructors using the same artificial devices employed in the armory, while the very best training aid—the real terrain all around them—was completely ignored).

For the many combat arms officers

This department is designed to accommodate the short, pithy and good humored expression of ideas—radical and reactionary, new and old. We pay for all contributions published but you deserve to be put on notice that the rate of payment depends upon the originality of the subject and the quality of writing rather than length. This department is hungry for contributions, so shoot that good idea in . . . today.

spending so much of their service in staff and support assignments, the tactical walk is a ready means for commanders to provide stimulating refresher training. A carefully planned tactical walk or ride once a month or so for desk commandos would prevent mental atrophy.

In referring to the accelerated evolution of units, matériel and tactical doctrine necessitated by the advent of nuclear fission, General Willard G. Wyman, commander of CONARC, recently warned: "Before men can act in new patterns, they must *think* in new patterns!" The commander can use the tactical walk to issue a command invitation to think. No need to wait for units and tools now being developed to materialize. Mental preparation for their combat employment can begin *now* in every unit. All it takes is a tactical walk!

Sergeant First Class Forrest K Kleinman, *after serving as a major in Korea, did a hitch at Sixth Army headquarters, and is now with the Information Section of CONARC. He wrote "We're Getting Tougher" (October 1950) and "The Tie That Binds" (February 1955).*

PISTOLS, HOLSTERS AND CARTRIDGES

JOHN L. HOFUES

LIKE our M1 rifle, the M1911 .45 pistol can stand improvement. If you think the pistol is unimportant, remember that the infantry regiment, under present allowances, requires more than 500, and that the rifle company—than whom no one gets closer to close-in combat—has about 30.

The soldier armed with the pistol invariably has an assignment that may call for a last-ditch need of the fastest-handling and quickest-firing weapon: machine gunner, mortar man, communications man, ammo bearer—all must continue to perform to the last breath.

The most remarkable thing about the M1911 is that we ever adopted it. For many years the Army got along with rugged, reliable double-action revolvers. The argument that the M1911 was adopted because of its powerful shock effect ignores the M1909 double-action revolver which handled the Long Colt ammunition that was more powerful than our present cartridge. The M1917 double-action revolver used the same cartridge as the M1911 automatic.

The first round in the M1911, and its modification, the A1, is fired by single action. To cock the pistol for the first round a soldier in combat must awkwardly, yet quickly, pull back the hammer with his thumb or fan it with his other hand—a waste of vital seconds. The pistol frame's shape makes cocking by thumb doubly difficult. The rearward-projecting tang and the grip safety are obstacles to speedy action. Fanning requires both hands, and much practice to master with speed and accuracy. Getting off that all-important first shot, then, demands time-consuming cocking and squeezing and considerable thumb and hand motion exercises.

Carrying the pistol cocked, even with manual safety locked, is an extremely dangerous practice. Fanning is eliminated and less thumb travel to unlock the safety is involved, but two movements are still necessary to fire.

Law enforcement officers generally prefer the modern double-action revolver. It is strange that we continue using a clumsy design.

I do not say we should change over to the revolver. Semiautomatic pistols with double-action mechanisms are not new. Soldiers of World War II can remember the Walther P-38 double-action automatic pistol which fired the 9mm Luger cartridge. Recently Smith & Wesson introduced a double-action semiautomatic pistol in that caliber.

The constantly rechargeable magazine is a must for the combat pistol as it is for the combat rifle. Current designs of most semiautomatics, including our .45, allow the magazine to be withdrawn while a live cartridge remains in the chamber. The pistol can fire even though the magazine is removed and no opening of the chamber is required. But recharging by inserting loose cartridges through a loading gate into a self-contained magazine would be best. Such a feature reduces the danger of being surprised with an empty weapon.

In combat, survival frequently hinges on a fraction of a second. Our .45 pistol is dangerously slow to remove from its flap-type hip holster (or shoulder holster, for that matter). The flap-top holster locks in the pistol securely—and I mean *locks in.* Anyone who has fumbled with a flap under pressure would wish such a contraption only on an enemy.

It is claimed that the flap holster protects the weapon from mud, sand and snow. Anyone who carried the M1911 in Korea can tell you differently. Arguing for retention of the flap holster is like insisting on riflemen carrying their pieces in protective cases at all times. You can't be sure just when you will need to use your weapon, and use it fast.

The shoulder holster, which uses a strap to lock in the pistol, is no better. It is inconveniently carried under the armpit, and this interferes with a fast draw by increasing the number of motions made by the shooting hand and lengthening the distance over which the hand must travel.

The best holster for combat would be a simple lock-in type, without flap or strap, which leaves the hands free to make an uninterrupted, fast draw. Commercial flapless and strapless holsters like the Berns-Martin, the Myres, and the Lawrence are available, and these meet modern combat conditions. These "lightning leather" types lock in the pistol by enclosing the trigger guard from the rear, thus allowing a fast forward draw. Instead of pulling the weapon up and out, hand and weapon move forward in a natural draw. This type is not joined in front. Its "lips" grip the weapon by pressure applied by steel clamping springs enclosed in the leather.

These spring-clamp holsters should not be confused with mechanical spring-hinge types. The mechanical holster opens like a clamshell when a compressed or tensed spring is released.

It may seem suitable for field use, but the hinges foul easily and may not operate.

A good weapon, a quick draw, and a fast shot are highly important, but we must not overlook the fact that the result of a shot is what counts. Our .45 cartridge is fast becoming obsolete. The use of body armor in modern warfare demands that a bullet perform like a miniature armor-piercing projectile. Our .45 auto pistol bullet will not always do this. The body armor of tomorrow will be even stronger than today's, and our bullet, with its blunt, short, large-diameter form, driven at low speed, will be no good for penetrating it. Our people in Korea found that the Russian caliber .30 Tokarev bullet penetrated steel helmets easily where our .45 merely caused a splashing dent.

The bullet for the modern combat pistol should have a sharper point for penetrating; a higher speed to shorten penetration time, thus minimizing structural resistance of shielding materials; and a longer body to maintain the momentum required for maximum penetration.

Commercial designs of bullets and cartridges offer fine starting points for study. The ideal service pistol caliber, one that would combine maximum penetration and tremendous shock effect, probably lies somewhere between the commercial .357 Magnum and .44 Magnum sizes. Both develop high speeds in barrels of the length of the .45 automatic pistol.

In three wars our M1911 pistol has done the best job it could. But it, and its holsters and its ammunition, should be retired in favor of more modern accompanying items.

John L. Hofues, *firearms student, shooter and experimenter, is a civilian Educational-Special Writer for the Department of Non-Resident Instruction, The Infantry School. He wrote "Bring the M1 Up to Date" in the January issue.*

TELL US WHERE WE STAND!

LIEUTENANT COLONEL LACHLAN M. SINCLAIR

THERE is one step in the current efficiency report system that not only violates other Army policy but is inconsistent with modern personnel practice. I refer to that harmless-sounding sentence in AR 600-185, which tells us that the efficiency report "is neither designed nor suitable for use as a counseling or supervisory aid." I should also mention that paragraph of SR 600-185-1 which says: "The present efficiency report form is designed specifically for use only at Department of the Army level and not for use at unit level. It is neither intended nor suitable for use by immediate supervisors as an aid in counseling subordinates toward improved performance."

Time was when it was appropriate to show the rated officer his efficiency report and to discuss it with him. I can recall when a comment to that effect had to be entered in the "remarks" section. We may not always have agreed with the appraisals of superiors, but at least we knew where we stood. It wasn't necessary to go to Washington to examine our reports, nor to authorize an agent to examine them. We were not dismayed to learn long after the event that we had been adjudged to have performed inadequately.

We knew our shortcomings and virtues as our superiors reported them.

A principle of leadership taught by our Army is to "keep your men informed," but our present efficiency report system violates that principle, for neither your rater nor your indorser has to tell you anything. Your report can be examined only after it reaches Washington, and most of us can't get there for months and even years. Why not show us the reports when they are made out?

Another leadership principle is to "know yourself and seek self-improvement." But can we do that to the fullest extent when the agency that advocates this principle in FM 22-10 establishes a procedure in AR 600-185 that hampers it for officers? Regulations on the efficiency report are the only ones the Army has that implies a man becomes more efficient if his superiors keep him ignorant of what they think of his performance.

Modern personnel practice recognizes that the "merit rating" or efficiency report not only aids management in promoting, reassigning and transferring, but is also a leadership tool that tells a subordinate where he is good and how he can become better. General Patton once wrote: "Officers who fail to correct errors or to praise excellence are valueless in peace and dangerous misfits in war."

If we follow this advice, the efficiency report could be more than simply an officer's record. It could be a starting point for him to improve on his performance. FM 21-5 tells us that "a commander encourages and assists his officers to improve themselves professionally." Backed by the rater's experience and wise counseling, the efficiency report could provide such assistance. It could develop leaders, which is the purpose of military training. Used openly as a counseling aid, it could strengthen the bond between rated officer and superior.

Drs. Pigors and Myers, professors of industrial relations at MIT, in their *Personnel Administration,* say: "When an employee has been selected, hired, placed, inducted, and trained for a particular job, he is entitled to know from time to time how he is measuring up to expected standards of job performance. His supervisor is responsible for giving him this information." The Performance Rating Act of 1950 provides that each officer and employee of the civil service be kept advised of his performance and promptly notified of his performance rating. If civilians can be kept informed, why not Army officers?

No doubt the use of the current efficiency report, an improvement over its predecessors, received much thought, but the principle of "tell 'em nothing," so inconsistent with other Army policy and commercial and civil service practice, is what needs revision.

Some say that the prospect of face-to-face discussion influences the rater toward rendering inflated reports. Maybe so. But are we to believe that our commanders lack the tact and moral courage to tell the truth to a subordinate face to face? Others claim that informing a subordinate of his faults, virtues and progress is something entirely apart from the efficiency report, and that other methods should be used. The Army's policy is clearly stated in SR 600-185-1: "It is the responsiblity of rating officers continually to correct deficiencies and stimulate improvement in subordinates, but the efficiency report is not intended as an aid in that task. The time for such corrections is when the need for them is observed. Correc-

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tive action will not be deferred until efficiency reports are due. The rating officer should arrange a personal interview with each officer whom he rates or, when the distance would require official travel, through the medium of correspondence, and should enumerate such deficiencies as he may have observed or determined from official reports and correspondence and give positive suggestions for improvement and further development. This interview should be accomplished prior to the completion of any efficiency report."

This system would be excellent if it were fully carried out in the manner intended by those who devised it. But it is not done, for while the submission of efficiency reports is mandatory, the personal interview is not. "The rating officer *should* arrange a personal interview," but does he always have the time, and is he willing to state an unpleasant fact? Fail to render an efficiency report and the long arm of administration reaches across the world to insure compliance; yet the system fails to guarantee the rated officer the right to be informed.

It is only fair to say that AR623-105 offers some improvement. A new procedure has been approved to complement the new efficiency report form which will require all reports to be reviewed at the echelon next above the indorser. The reviewing agency can call on the rated, rating and/or indorsing officers for further comment. The new system may correct some errors, but I still believe it would be easier to show reports to rated officers *before* they go forward.

A subordinate's greatest reward is his CO's recognition of a job well done. He wants to correct his faults too, and will welcome constructive criticism. So tell us where we stand!

Lieutenant Colonel Lachlan M. Sinclair, Infantry, *is a 1937 graduate of the University of California. He was commissioned in the California National Guard in 1935 and integrated into the Regular Army in 1946. Recently a battalion commander and regimental executive officer at Fort Dix, he is now PMST at St. Thomas Military Academy, St. Paul, Minnesota. He also contributes another Cerebration on page 66.*

ARE BRANCHES OBSOLETE?

COLONEL JOHN D. COLE

WHY, among the uniformed services, does the Army alone cling to a rigid system of branches? The Navy has a supply corps, medicos and a few specialists, but the majority of its officers and all its combat officers wear the star of the Line. Naval aviators are and have always been sailors first and flyers second. Perhaps that's the reason why a move to form a separate naval air force never developed.

We in the modern Army are alert to the need for flexibility. We point with pride to well-rounded officers, schooled in the employment of the combined arms. We talk learnedly of mobile, hard-hitting forces, but how many of us really learn much about other arms and services until we reach field grade? What percentage of us ever command or even serve with a unit of another branch? Even general officers of the line are referred to (and by themselves as well as by others) as artillerymen, doughboys, tankers, and so on. The inflexibility within the Technical Services matches this.

This is an age of specialization, and the need for technicians in every field is with us to an ever increasing degree. But a collar ornament does not make a specialist. Only training and experience can do that. In many respects our branch system denies specialists an opportunity to get the training and experience that would enable them to better integrate their technical skills into the Army team. The other services have specialists too, and most of their officers spend the best part of their careers in some particular activity. No eyebrows are lifted when, for example, an Air Force officer who has spent most of his time in communications is given command of a bomber squadron. His insignia does not automatically disqualify him for a job outside his own narrow sphere.

How many of us consider ourselves members of a branch first and of the Army secondarily? How many would be seen wearing a scarf of the wrong color? How many artillerymen accept "The Caissons" as our Army's song? Branch esprit, competition and specialization are fine, but maybe they are engendering inflexibility, rivalry and lack of understanding and teamwork. The Army led the way in the battles over unification, and we have accused the other services of foot-dragging. Perhaps we'd better look into unifying ourselves.

The specter of the atomic battlefield suggests more and more the integration of our combat and service functions at lower and lower levels. Our tables of organization have already begun to reflect this trend, and branch schools are giving more and more time to subjects peculiar to the other arms and services. This magazine itself has removed its branch insignia and become simply *ARMY*. How about our own insignia?

Col. John D. Cole, Corps of Engineers, *a 1935 graduate of USMA, is Chief of Staff, 10th Infantry Division, in Germany.*

LEAD BY DOING

CAPTAIN AMOS L. WRIGHT

THE most overworked word in our military lexicon is "Leadership." We belabor our young soldiers with the word in classes, lectures and written exhortations. We spend so much time explaining leadership and its principles (what *are* they, anyway?), the attributes of a good leader and how one can acquire them through self-appraisal, introspection, study, and so on, that we almost forget to teach the young officer or noncommissioned officer what his job is and how to do it.

Why not forget the word and instead define the job we want done, learn how to do it, and then do it? Then we will become leaders without being conscious of the transition. Did the Great Captains preoccupy themselves with introspection and self-appraisal, setting their eyes on becoming great leaders in the eyes of their men?

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Or did they see what had to be done as challenges and with an eye set on the glory of achieving the objective, buckle down and do the job? Clearly the force that motivates great leaders is the will to achieve. Almost no thought is given to the desire to be esteemed as a leader. Getting right down to it, the only thing leaders have in common is followers.

If we could teach people to do their jobs, leadership would follow automatically and with a subtlety that would have telling effect. But we go at it backward because in teaching classes in formal leadership theory we waste time that could be spent learning the soldier's trade while soaking up more knowledge about leadership than can be learned in twice the time we devote to classes on the subject. So it makes common sense to work on getting results, to concentrate on the mission—the job—instead of on some nebulous theory or set of principles. I do not advocate that the end justifies the means. By results I mean long-term good results, so that when you get one job done your unit is ready to follow you to the next one.

It is difficult to motivate and organize men, especially Americans, to accept the tough, dirty jobs of modern war. Patriotism, that unconquerable fire in men's hearts, seems to have gone out of fashion; the traditions of careful respect for elders and superiors and formal behavior among ranks have given way to a rather jovial camaraderie of first-name, back-slapping familiarity. Formal behavior made it easier to maintain strict discipline. It created trust and confidence in superiors. Nowadays a man must lead by the naked force of persuasion and his own personality. He lacks the force of tradition and custom, of solid established policy and routine adherence to simple, well-known rules and standards of conduct. This places a terrific burden on today's leaders when failure can mean more than merely the loss of a battle; where instead failure to do the job can lead to defeat and even death for a nation.

It seems that most of us have failed to recognize the need for regimentation and strict discipline in a military force. Iron, inflexible discipline was indispensable in the days when armies fought with spears and swords and men came to grips. Now that we shoot from a distance, we seem to think there is little need for discipline and regimentation. Our resolve to win the battle has not kept pace with the intelligence that produced better weapons. Even with modern weapons, battles are more difficult to win than ever before, granted the enemy has similar weapons. We delude ourselves when we think we need less discipline; in fact we need more.

Response to command must be more rapid and complete, and must include the element of trusting one's superior without having to demand "why." Have we come to the place that a command is considered a point of departure for further discussion instead of a signal for concerted action? Recently the Chief of Staff issued a plain directive on the uniform, discouraging the wearing of shade 33 at all. The only exception would be when an officer was posted in front of a formation as its commander. Yet certain officers continued to wear ODs when not in formation, because the local commander didn't want to obey the order, ruling that officers on his post were "considered to be in formation with troops." When command response sinks this low, it's time something drastic is done to improve it. If we can't obey a simple order concerning uniforms, how can we obey important ones if they don't suit us?

To restore confidence and correct these unfortunate trends, a complete return to fundamental principles is demanded of each of us. We must buckle down, hitch our belts and seek to preserve those traditions and customs that should govern everyday military conduct. We must re-establish formality and respect among ranks so that it will again be possible to command instead of to persuade, and give a leader the help and assistance his superior should provide instead of leaving everything to him. Only then will we see missions accomplished and real leaders emerge. We will have to work hard for many years to improve slowly, but it will be worth doing.

Captain Amos L. Wright, Corps of Engineers *(USMA 1945) is a graduate of California Tech and the Advanced Course of TES. He is presently assigned to the Engineer Section of CONARC.*

SHOW 'EM IN FIGHTING GEAR

LIEUTENANT COLONEL LACHLAN M. SINCLAIR

YEARS ago I heard a San Francisco policeman lament the difficulty he had in selling tickets to the Policemen's Ball.

"Yet it's easy to sell them for the *Firemen's Ball.* Whenever the public sees a fireman at work he is in his helmet and rubber boots, chopping away at a burning roof or carrying a kid out of a burning building. But what does the public see of a policeman? They don't often get a chance to see him capture a bank robber. Usually they see him in a neat new uniform, standing on a street corner apparently doing nothing. No wonder the fire laddies get all the money!"

Aren't we in the Army making the same mistake? Open a recent edition of the ROTC manual to where the text discusses prominent Army leaders. With one exception the portraits are one stereotype after another: colors in the background, immaculate uniform, pleasant smile. Probably all were taken in a Pentagon office—and they look it.

Are these the men who led a magnificent army in World War II and Korea? They are, but their personalities and their great battlefield leadership are being masked by unimaginative photo coverage.

Why not photos of our Army leaders with the men and the weapons with which they would fight if war comes again? I have in mind pictures like that of General Eisenhower talking to the combat-equipped men of the 101st Airborne Division the evening before D-day of Overlord. Or one like that of General Ridgway with grenades and first-aid packet strapped to the front of his combat equipment. Or like the one of General Van Fleet stepping out of his helicopter at a battalion command post on a Korean hillside, four stars and Combat Infantryman Badge twinkling in the sun.

I don't advocate wearing combat boots and steel helmets in the Pentagon. But let's show the world our generals know how to wear them.

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The Month's Mail

(Continued from Page 11)

why the Army should not do the same thing. Some of the best material the Army has is in the Sergeant and SFC grade, but unless the deadwood is eliminated or reduced these good men just do not get promoted. I may be wrong but it is probably the comment on NCO's that raises Sergeant Hibbert's hackles. But I did not condemn *all* NCO's—admittedly I did a very high percentage. (While on this subject I might comment on Sergeant Yancey's letter on the unjustness of this statement. I just do not agree with Sergeant Yancey that the percentage of poor NCO's is very small.) Many NCO's will not agree, but I know a tremendous number of most competent NCO's who feel a housecleaning is in order, a housecleaning that will provide the good NCO's with the rank, prestige, and pride in their Corps they so richly deserve. Besides, let us not lose sight of the target. This article is about a system that deemphasizes the commander, both officer and enlisted. It is not an article about inefficient NCO's.

Finally, Sergeant Hibbert thinks this was a local problem. This is where he and I part company. This is an Army-wide problem of serious stature. Sergeant Hibbert's letter is the best evidence of this fact. He tells of repeated failure to take corrective action in disciplinary matters in his own unit. He states that "the few good noncommissioned officers still around are like older brothers of the spoiled child," he admits that we are "nowhere near the minimum standards from the standpoint of efficiency," and then says *"but I blame the commander."* So do I. But when so many commanders are encountering the problems enumerated and so many have come to accept these conditions as the norm then it must be *the system* that creates the condition —it is not the individual commander.

I have had the privilege of serving with troops in a command capacity for at least half of my eighteen years' service. A series of splendid commanders taught me much. Experience acquired at every level from platoon to regiment demands recognition of the problems we have been discussing. But more important than my personal views are those of the commanders at almost every echelon from regiment to platoon from whom I have received letters. If Sergeant Hibbert could but see a few of these letters I think he would agree that this is not a local problem. Since the Army means so much to me I wish Sergeant Hibbert was right, but I am afraid he is not.

COL. A. S. COLLINS, JR.
Carlisle Barracks, Pa.

At Verona, Italy where the 52d Armored Infantry Battalion has the mission of protecting the atomic weapons of the Southern European Task Force, a tracked vehicle driving school gives prospective tanks drivers the full treatment.

The Army's Month

(Continued from Page 13)

Self-Service Supply

Fort Benning's new Self-Service Supply Center is in operation. The new supply center operated by the Infantry Center Ordnance Section is open from 0900 to 1530, Monday through Friday, dispensing expendible supplies to Infantry Center, Infantry School, Infantry Board and 3d Infantry Division units.

Organized as a supermarket, the supply center stocks 1,040 items including office, housekeeping and general supplies, plus hardware, repair and spare parts.

"Customers" from units select items from shelves and bins and use a metal charge-a-plate to authorize their purchases at a check-out counter. All purchases are charged against the unit's monthly monetary allocation.

Army Injury Rates

Injuries are the cause of seventy-five per cent of the deaths in the Army, reports Lt. Col. Herschel E. Griffin, Chief of the Communicable Disease Branch, Office of the Army Surgeon General. About half of these injuries result from automobile accidents, most of which occur during off-duty hours.

The Army is trying a two-pronged attack on the problem. Through research and development it tries to learn what the killing agent is when death results from accident. By studying road conditions and traffic situations, the Army tries to determine who was hurt and why. Civilian medical, safety, police and engineering personnel are cooperating in the program.

Theme for 57: Power for Peace

"Power for Peace" again will be the slogan for the day on which the public is invited to take a close look at our national defense system—Armed Forces Day, 18 May 1957—the tenth anniversary of unification.

Complaints about Survivor Act

Major complaints heard about the Survivor Benefits Act, which went into effect on 1 January:

Termination of the $10,000 free indemnity now makes them pay for their own insurance; that persons who entered the services after 26 April 1951, with no UGSLI or NSLI, must pay higher rates for commercial insurance policies.

The Social Security tax deduction amounts to a pay cut, since servicemen

(Continued on Page 72)

AROUND THE WORLD WITH SIKORSKY HELICOPTERS

IN ASIAN WATERS—Aboard the U. S. Navy aircraft carrier *Boxer* off the coast of Japan, sonar-equipped Sikorsky HSS helicopters carry out anti-submarine exercises. The commercial version of this helicopter, the S-58, is active offshore in the Gulf of Mexico flying men and material to oil drilling rigs.

ANTARCTIC OPERATIONS prove the ability of versatile Sikorsky helicopters to work under extremes of climate and under unusually difficult maintenance conditions. Here a Sikorsky HO4S, one of four with Task Force 43, lands beside the icebreaker *Glacier* to pick up cargo.

AT FORT RUCKER, Alabama, the Sikorsky H-37A is being service-tested by the U.S. Army Aviation Board. Data on maintenance and logistics will be gathered, in preparation for the time when the Army flies large fleets of these twin-engined helicopters, each able to carry 26 combat-ready troops.

SIKORSKY AIRCRAFT
BRIDGEPORT, CONNECTICUT
One of the Divisions of United Aircraft Corporation

Irons in the Fire

New Radar Mortar Locator

A new radar mortar locator with an electronic brain and using a new beam technique has been perfected by the Army Signal Corps Engineering Laboratories at Fort Monmouth. The AN/MP-Q-4, as it is technically known, pinpoints

Mobile and highly accurate, the new radar locator can be set up in minutes

enemy mortar fire in seconds. The new locator has a longer range than any known mortar built today.

Compact and mobile, with everything needed to operate it but power supply, the locator is mounted on a single, easily towed, two-wheel trailer. It can be operated either on the trailer or with the console in a foxhole 150 yards away for remote control and safety of the operator if the set itself comes under fire.

Efficiency has been increased by the stationary bulldozer-blade antenna which automatically picks up anything in its sector.

Projectiles appear as blips on the screen. When these are centered on hairlines the computer relays a direct map coordinate reading of the enemy position. In hilly terrain computer readings are corrected by inserting the mortar height into the computer, location is made rapidly and the entire procedure is completed in a few seconds. Relayed to an artillery battery this information triggers immediate counter fire.

Ultra-Miniature TV Camera

A new pocket-sized TV camera, weighing less than one pound, yet surpassing standard industrial TV cameras in sensitivity, has been developed by RCA for military closed-circuit operations. The virtually unprecedented design and operating simplicity features a combination of transistors, special transistor circuitry and a new half-inch vidicon camera tube.

This camera opens up new fields for closed-circuit TV by permitting direct observation and reconnaissance in places and locations heretofore inaccessible with existing equipment.

The camera can be operated in the palm of the hand, used with an attachable pistol-grip handle, bolted to wall or floor, or mounted on a tripod. It incorporates a photoelectric iris control which compensates for changing light levels and is designed to operate from a 115-volt, 60-cycle AC source drawing less than

Rugged TV camera for military use

350 watts and dissipating only three watts.

Its rugged construction for military airborne, mobile and field requirements features a high level of resistance to shock and vibration, and the design permits encasing the internal construction in standard potting compounds.

New Wire Stringing Device

A new device for aerial wire laying consisting of six steel tubes carrying 54 miles of combat ground wire suspended from the cargo sling of a helicopter was devised by Captain Edward Landry, executive officer of the 4th Transportation Company (light helicopter).

The device is capable of reeling out six lines of wire simultaneously. Its big test came during the recent airborne exercises at Fort Bragg when wires attached to a shot bag were dropped at the command post switchboard and in less than six minutes, 14 miles of communication wire had been strung between the headquarters elements and the striking force.

Each of the steel tubes is nine feet long and holds nine miles of wire in 18 one-half mile containers.

Further tests will be conducted.

New Fluid Transporter For TC

The Army Transportation Corps in cooperation with the rubber industry has developed a device tagged the "rolling fluid transporter" which may prove to be the first major improvement in transporting bulk fluids since the development of the steel drum.

With a capacity of five hundred gallons and weighing two tons fully loaded, six transporters can be towed on level ground by a conventional Army jeep. Composed of a series of collapsible fabric-reinforced rubber bags centered with appropriate axles and connected to a towing yoke, the transporter can be towed without loss of cargo space in truck bodies and present no greater maneuverability problems than those encountered in handling conventional auto trailers. The roller effect on unprepared surfaces such as might be encountered on "over the beach" operations, tends to pack the surface, improving the track with each successive pass.

High-Speed Ditchers Tested

Mobile ditching machines capable of digging four-feet-deep trenches at rates exceeding 20 feet a minute are undergoing tests at the Corps of Engineers' Research and Development Laboratories, Fort Belvoir, Va.

Manufactured by the Owen-Pewthers Company and the Barber-Greene Company, the rubber-tired units may prove extremely useful to the Army in the rapid excavation of field fortifications and utility trenches. Both units have a maximum digging depth of six feet and can excavate a foxhole in thirty seconds.

The Barber-Greene model has 21 buckets with interchangeable insert-type teeth, and is mounted on a special vehicle which is powered by a 154-horsepower diesel engine. It is capable of digging twenty-eight feet a minute. The Owen-Pewthers unit consists of forty buckets equipped with interchangeable insert-type teeth, and a side leveling mechanism which permits it to dig on slopes up to 15 degrees. It is mounted on a standard truck and is capable of digging at the rate of twenty-four feet a minute. Its hydraulically operated boom can be placed into digging position in less than a minute after arrival at a site.

High-Speed Tow Target

Two modifications of the revolutionary dart-shaped aerial target developed by Beech Aircraft Corporation which is capable of being towed at supersonic speeds have been ordered by the Army for use in an evaluation program to determine the feasibility of adopting the high speed tow target for AAA armament system training.

The modified XM-28 is a plain plywood fin unit coated with a fluorescent paint and pulled for gunners operating predicted-fire weapons. The other modification, XM-29, is equipped with foil-covered fins for checking VT fuze activation of projectiles. Experiments will also be made with a metalized reflective paint which can be sprayed on the XM-29 in place of using foil.

The tests which are being conducted at Fort Bliss, Texas, under the supervision of CONARC are divided into two phases, one incorporating a new method of air launching the target and the other employing the current "snatch-launch" technique. Of primary interest in the test program will be the target's radar reflectivity, flight stability, and visual tracking ability.

Lacrosse, Army's newest SSM missile

Lacrosse Missile in Production

Army's newest missile, the Lacrosse, has advanced from the laboratory stage to a producible weapons system with the letting of a contract to the Martin Company of Baltimore.

Designed and developed under the direction of Army Ordnance by the Cornell Aeronautical Laboratories, Inc., Buffalo, N. Y., the Lacrosse is an all-weather surface-to-surface field artillery missile. The Lacrosse is propelled in flight by a solid fuel rocket motor, fired from a launcher mounted on a standard Army truck and controlled by a guidance system. User units will be able to answer calls for fire in the same time required for conventional artillery and with a rapidity comparable to that of a 105mm howitzer. Test firings have proven the Lacrosse to be highly accurate.

Detcchable Retriever

One driver and any standard truck tractor equipped with the new Watson Towmaster can transfer or bring in disabled or wrecked trucks. The Towmaster is a detachable crane which anchors to the fifth wheel with one adjustment. No overhead crane is necessary for mounting or dismounting as the Towmaster has its own built-in hoisting mechanism.

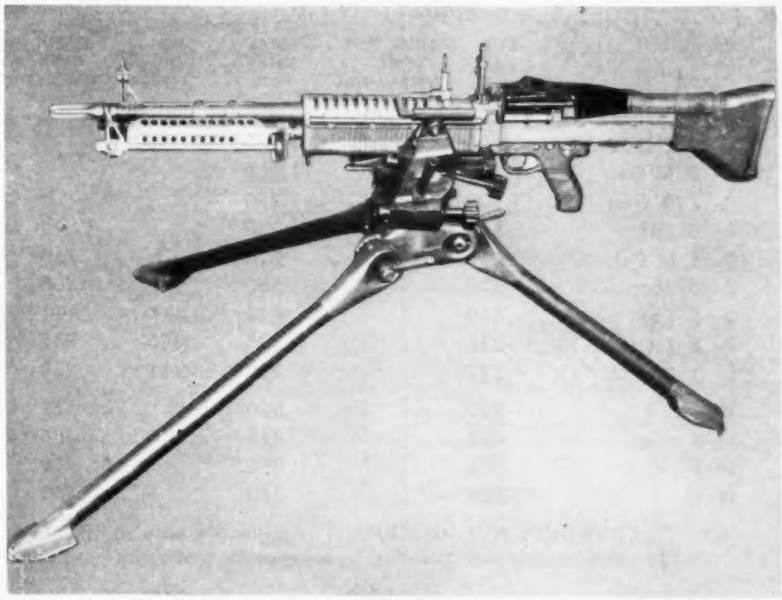
With a ten thousand pound capacity with safety factor, weighing 450 pounds and with little or no maintenance requirements, the Towmaster can safely handle the majority of highway towing. It can tow a truck frontward or backward, tracks true at all times and holds firmly on the severest road curvatures or braking conditions. Additional traction and weight are given by the Towmaster to the towing vehicle's driving wheels, which is an important consideration for slippery road conditions.

Army Adopts M60 Machine Gun

A new lightweight general purpose machine gun which fires the NATO approved 7.62mm cartridge has been adopted by the Army to replace the three heavier caliber .30 machine guns.

The new air cooled, gas operated gun, with bipod, weighs 23 pounds, has an overall length of 43 inches, a rotary locking belt, a disintegrating metallic-link feed belt and fires six hundred rounds per minute. It can be fired from a bipod, a new lightweight tripod mount or from the shoulder or hip during assault fire. The chrome plated stellite lined barrel, which greatly increases its firing life, and the gas system of the new M60 can be replaced in a matter of seconds.

According to current Army plans, initial issue of the M60 to troops will take place in 1959 with the 101st Airborne Division scheduled to be the first to receive the new machine gun.



The M60 will replace the caliber .30 M1919A4 and its successors

The Army's Month

(Continued from Page 68)

must bear the cost of their own survivor benefits.

The Act victimizes unmarried soldiers.

DOD's responses to these complaints are:

The $10,000 "free insurance" paid beneficiaries $92.90 a month for ten years only. DOD believes the new law's over-all benefits more than compensate for this. For example, under the new Dependency and Indemnity Compensation paid through VA, an un-remarried widow gets, for life, $112 monthly plus 12 per cent of the serviceman's base pay. Payments go as high as $242. This is more than the ten year $92.90 plus VA compensation of $69.60 monthly for a peacetime or $87 for a wartime death. In addition to the more liberal VA compensation to the un-remarried widow, there are other benefits payable through Social Security: lump-sum death payment of from $90 to $255; survivor benefits for dependents of from $45 to $200; retirement benefits for the serviceman himself at age 65 of from $30 to $108.50, in addition to retirement pay.

Social Security deductions are a sound investment in the future, and survivor and retirement benefits from the relatively small monthly payments are well worth their costs.

Most unmarried servicemen without dependents are young and in their early years of service; it is the law's intent to make these benefits available to all servicemen when they acquire families.

These tables are the Cordiner Committee's recommended pay structure for officers and enlisted men. Most controversial of the recommendations is the abolishment of longevity pay. In its place would be substituted in-grade pay steps. Secretary Wilson told Congress he hoped it would act with dispatch on the proposals. Senator Richard B. Russell, Chairman of the Senate Armed Services Committee, said he favored a pay hike. First action will have to be by the House of Representatives.

PROPOSED PAY STRUCTURE FOR ENLISTED GRADES

GRADE	BASIC ENTRY PAY	IN-GRADE PAY STEPS OVER 2 YRS.	OVER 4 YRS.	OVER 6 YRS.	OVER 8 YRS.
E-9	$400.00	$410.00	$420.00	$430.00	$440.00
E-8	350.00	360.00	370.00	380.00	
E-7	300.00	310.00	320.00	330.00	
E-6	250.00	260.00	270.00	280.00	
E-5	210.00	220.00	230.00		
E-4	140.40	180.00			
E-3	99.37	117.00			
E-2	85.80				
E-1	78.00				

Basic entry pay rates developed to align with normal advancement of DOD "average man" who makes E-3 in less than 2 years, E-7 in 11 years. No pay inversions—limited in-grade pay steps.

PROPOSED PAY STRUCTURE FOR OFFICERS AND WARRANT OFFICERS

GRADE	GRADE ENTRY RATE: BASIC PAY RATE	ACTIVE DUTY PAY SUPPLEMENTAL	TOTAL ENTRY RATE	IN-GRADE PAY STEPS (Including Active Duty Supplement): STEP I OVER 1 YEAR	STEP II OVER 2 YEARS	STEP III OVER 3 YEARS	STEP IV OVER 4 YEARS	STEP V OVER 5 YEARS	STEP VI OVER 6 YEARS
0-10 Gen	$1,700	$300	$2,000						
0- 9 L Gen	1,500	250	1,750						
0- 8 M Gen	1,300	200	1,500						
0- 7 B Gen	1,100	150	1,250						
0- 6 Col	850	100	950		1,015		1,080		
0- 5 Lt Col	660	50	710		750		795		840
0- 4 Maj	530		530		560		595		630
0- 3 Capt	410		410	431	444	457	470	485	500
0- 2 1st Lt	335		335	345	355	365	375		
0- 1 2nd Lt	222		222	244	268				
W-4	530		530		557		585		
W-3	462		462		484		506		
W-2	396		396		418		440		
W-1	350		350		373				

Note: "ACTIVE DUTY PAY SUPPLEMENT" applicable only to officers on extended active duty exceeding 30 days, and is not included in computation of retirement pay.

THE MONTH'S BOOKS

Rebellion by Telephone

CONSPIRACY AMONG GENERALS
By Wilhelm von Schramm; translated and edited by R. T. Clark
Charles Scribner's Sons, 1956
215 Pages; Illustrated; Index; $3.95

Reviewed by
LT. COL. JAMES D. ATKINSON

Of all the stories of "it might have been" of World War II, few are as fascinating as the possibilities which existed in the plot against Hitler's life and the negotiations for a German surrender in the summer of 1944 which might have taken place had Hitler been killed instead of merely wounded by the bomb explosion at the "Wolf's Lair" in Rastenburg, East Prussia.

CIA Chief Allen W. Dulles, J. W. Wheeler-Bennett, Professor Alan Bullock, Hans Rothfels and others have ably described the German opposition to Hitler and the events in Germany itself during the bomb plot of July 1944. Now, however, for the first time we have the story of those July days, told against the backdrop of the German High Command in France. For it was in Paris there existed not only a determined group of conspirators, but also something which not even Berlin possessed. Paris had "reliable troops at immediate disposal and a leadership prepared to take risks." The French front, too, was doubly important to the officers who were conspiring against Hitler, for they believed that while there was no hope of negotiating with the Soviets, there might be some possibility of talking to the British and the Americans.

The author of *Conspiracy Among Generals*, Captain von Schramm, a senior war reporter on the German Staff, was not an active plotter, but was personally acquainted with most of the conspirators and was in Paris and La-Roche-Guyon (Rommel's, and later Kluge's headquarters) during the events of 20-21 July. He is therefore qualified to piece together much of the information which we could previously only speculate about and his first-hand account of the successful *coup* in Paris makes fascinating reading. For the conspiracy in Paris, quite the opposite of the failure in Berlin, *was* highly successful. Under the orders of General von Stülpnagel (Military Governor and a leading conspirator) "shock troops, guns at the ready, stormed into the [SD] barracks, . . . and told the inmates that they were under arrest." SS and SD officers and staff were given the same treatment and, with the exception of a few SS officers who managed to escape, the Army had the situation completely under control by midnight of 20 July.

In these days of such extensive secret police forces in the Communist countries —and their supposed knowledge of every item of information as well as iron control—it is most interesting to note that the German Army troops were able to carry out mass arrests of the secret police quickly and quietly. The author states that "the order to arrest the Gestapo had the silent approval of the great majority . . . and they went to work whole-heartedly. . . . The Gestapo, who thought themselves quite secure in their privileged position, had not been at all alarmed by the radio news of the attempt on Hitler and had taken no precautions of any kind." He further points out that "the soldiers showed no surprise when they were told they were going to attack the Gestapo" and, perhaps, even more significantly as regards modern police states, "not a soul [that is, among the secret police] tried to resist."

Why, then, with such success in Paris did the *coup d'état* fail in France? The Military Governor had only a limited number of troops and had to depend for support on the Commander in Chief, West, who had, of course, the command, even at this late date, of powerful infantry, artillery and armored units. That commander had been Field Marshal Rommel, an active conspirator. Rommel had, however, been severely wounded shortly before the bomb plot. His successor, Field Marshal von Kluge, *wanted* to break with Hitler, but could only bring himself to do so in the firm assurance that Hitler was dead.

Here we come to the crux of the entire opposition within the armed forces to Hitler. Only here and there was a Colonel Klaus von Stauffenberg—ready to risk anything at any time to eliminate Hitler and the Nazis. For a man such as Kluge, the Prussian concept of obedience coupled with doubts concerning the oath which he had taken (to the Reich and to Hitler) all combined with his ideals about the duty of an officer to make him hesitate, waver, and constantly try to get reassurance about a course of action.

We would be less than just to Kluge—and to other German officers—if we did not realize that there was another, and a greater reason behind his inaction. That was fear. Fear not only for himself, but for his family. For if Hitler were still alive "there was no question of independent action." Our fortunate distance from both Nazi and Communist totalitarianism sometimes makes us fail to realize how wicked yet how all-pervasive they could be. But all the people in the immediate presence of these modern Molochs knew that they—or worse, their families—might at any time receive the mark of the beast. This atmosphere runs like a thread throughout this book. Was Hitler really dead? Was there a possibility of deliverance? Could one assume the risk of action? These were the questions being asked by many more than Kluge. This atmosphere of fear may be fittingly described in a passage which makes an excellent summary for this entire work. "In the anteroom the telephones were never quiet. The rebellion of July 20 was, unfortunately, conducted on the telephone. . . ."

THE MONTH'S REVIEWERS

Lt. Col. James D. Atkinson, USAR, has written several articles and reviews for us. He is Assistant Professor of Government at Georgetown University.

Colonel S. Legree is the pseudonym of an artilleryman of long service in USAR.

Dr. Stefan T. Possony, an occasional contributor, is Professor of International Politics at Georgetown University. He is the author of several books on military subjects.

Weakening Perennial

BRASSEY'S ANNUAL: The Armed Forces Year-Book, 1956
Edited by Rear Adm. H. G. Thursfield, Brig. C. N. Barclay and Air Vice Marshal W. N. Yool
The Macmillan Company, 1956
436 Pages; Tables; Charts, Illustrated; Index; $9.50

Reviewed by
STEFAN T. POSSONY

In its sixty-seventh year of publication, *Brassey's* is as informative as ever on military technical developments and the cur-

Selected Check List of the Month's Books

This run-down of some of the books received for review during the month preceding our deadline is to give our readers who like to follow current literature a monthly check list of the most important, useful and potentially popular books. Full reviews of some of these books will appear in this or subsequent issues. Any of these titles may be purchased through the Combat Forces Book Service. See page 80 for order coupon and a complete listing of Selected Books for Military Readers.

AT WHATEVER COST: The Story of the Dieppe Raid. By R. W. Thompson. Coward-McCann, 1957. 215 Pages; Illustrated; $3.50. A detailed, factual examination of the planning and execution of the Dieppe Raid of 1942.

BACKGROUND TO GLORY: The Life of George Rogers Clark. By John Bakeless. J. B. Lippincott Company, 1957. 386 Pages; Index; $6.00. Colonel Bakeless has proved once more that neither history nor biography need be dull. George Rogers Clark, one of our most colorful soldiers, makes a good subject for a breezy but accurate biography, rich in history.

DE LESSEPS OF SUEZ: The Man and His Times. By Charles Beatty. Harper & Brothers, 1956. 334 Pages; $4.50. A biography of the man who built the Suez Canal, failed in building the Panama Canal, and led a fabulous life throughout. Offers much background on the present problems at Suez.

GRAF SPEE: The Life and Death of a Raider. By Dudley Pope. J. B. Lippincott Company, 1957. 256 Pages; Index; Illustrated; $3.95. We landlocked individuals have had difficulty in understanding just what happened to the *Graf Spee* and her captain 'way back in 1939. Even acknowledging British seamanship, it never seemed reasonable that three thin-skinned cruisers could defeat the *Spee*. Here is the story, well told.

THE HISTORY OF JAPAN. By Kenneth Scott Latourette. Revised edition. The Macmillan Company, 1957. 299 Pages; $5.00. The famous capsule history of Japan is expanded to bring it up to date, but the book still does not exceed 300 pages.

LINCOLN AND HIS GENERALS. By T. Harry Williams. New edition. Grosset & Dunlap, 1957. 363 Pages; Index; Illustrated; $1.98. A reissue of the 1952 title, now $1.98 in hard covers. This is one way to build your library.

MAN UNLIMITED. By Heinz Gartmann. Pantheon Books, 1957. 213 Pages; Illustrated; $4.50. Since science hasn't been able to develop man as it develops hardware, many thinking persons have been wondering about technology's challenge to human endurance. This is a fairly short, but fairly extensive, survey of man's limitations in the jet age. Offers food for thought.

THE MEN WHO MADE THE NATION: The Architects of the Young Republic, 1782-1802. By John Dos Passos. Doubleday & Company, 1957. 469 Pages; Index; $5.95. A distinguished biographer, historian and novelist dramatizes the outstanding performances of the men who led our nation through its first twenty years.

THE NEW WORLD OF THE ATOM. By James Stokley. Ives Washburn, 1957. 288 Pages; Index; Illustrated; $5.50. Designed for the layman slightly more than casually interested, and willing to go into something a bit more thorough than the usual popularization. Covers both military and "peaceful" applications.

NOTES ON ATOMIC ENERGY FOR MEDICAL OFFICERS. By the Royal Naval Medical School, 1957. 169 Pages; Index; Plates; $4.75. Prepared by the staff of the British Royal Naval Medical School. No value to the layman.

ON LIMITING ATOMIC WAR. A Study Group Report, Royal Institute of International Affairs, 1957. 46 Pages; $.50. An examination by a British group of the alternatives available in an age of nuclear parity and a strong case for "graduated deterrents."

THE OSS AND I. By William J. Morgan. W. W. Norton & Company, 1957. 281 Pages; Illustrated; $3.75. An American psychologist tells how we trained our spies and saboteurs and how he became one himself in the French Underground.

REVOLUTION IN AMERICA. Translated and annotated by Bernhard A. Uhlendorf. Rutgers University Press, 1957. 640 Pages; Index; Illustrated; $9.00. The Adjutant General of the Hessian forces in the American Revolution wrote at least 94 letters to his superiors in Germany. Here we have the translations and explanatory notes. Major Baurmeister was astute and unbiased; the result is some new sidelights on a war that has been much written about, but little understood.

RIBBONS AND MEDALS. By Captain Taprell Dorling in association with L. F. Guille. George Philip & Son, 1957. 286 Pages; Index; Illustrated; $3.00. The eighth edition of a standard work on fruit salad that was first published in 1916. British-written, it still emphasizes British ribbons, but does include those of most of the world's major military forces. Full-color illustrations make it particularly useful.

SCIENCE IN THE FEDERAL GOVERNMENT. By A. Hunter Dupree. Harvard University Press, 1957. 460 Pages; Index; $7.50. A short history and interpretation of the relationship between the national government and science, from Benjamin Franklin to 1940. The Army and the other services have been connected intimately with this relationship; the Government's record has been astonishingly good.

U-BOAT KILLER. By Capt. Donald MacIntyre. W. W. Norton & Company, 1957. 239 Pages; Illustrated; $3.75. A thrilling, factual account of British destroyers in World War II written by one of their destroyer aces.

WEST POINT TODAY. By Kendall Banning. Coward-McCann, 1957. $3.75. A revision of a well-known book that should be in the library of every young man who hopes to attend the Military Academy.

rent status of the British armed forces. As a timely contribution, this volume contains a valuable survey of Middle East military forces. The usual summaries of British military budget estimates are done with customary skill.

Individual articles deal with the British services, weapons evolution, military organization, jet bombers, and air and antimissile defenses, military-civilian relationships, meteorology, local defense of overseas territories, service career and reserve questions, and more. Three "strategic" chapters discuss NATO, Soviet seapower, and aspects of the Middle East crisis. While most of these twenty-nine articles (some of which are written by Americans) contain valuable information and stimulating thoughts, none is really outstanding. Unfortunately, this volume prints a number of contributions which are quite out of date and contain misleading and occasionally erroneous statistics, although, to be sure, the editors have made commendable attempts to keep abreast of even the most recent technologies.

The result is a somewhat imbalanced mixture of voices from the decaying past and arguments about the distant future. The dismal present is treated in the manner of governmental reporting, which means that official statements are restated with more words, and complications touched upon only lightly. The very perplexing strategic issues confronting modern Britain are not faced frankly, and British defense policies, especially the unsound dependence on somewhat queer economics, are not analyzed as they should be. Critical evaluations are avoided like sin, presumably to preserve *Brassey's* Olympic detachment.

For example, *Brassey's* reprints the British Government's "Statement on Defence, 1956." American readers will discover with some surprise that British strategic objectives deviate from those assigned to the armed forces of the United States. In British strategy, the deterrence of nuclear war or, rather, a "contribution" to Allied deterrent power, is the first priority objective. As their fourth priority the British armed forces must be "capable of playing their part effectively in global war should it break out." These missions have their counterparts, of sorts, in U. S. strategy. However, the second priority of the British forces is to play their "part in the cold war" and by their "mere presence" to contribute to the security of areas which may be "threatened by subversion whether overtly communist or masquerading as nationalism." The British armed forces' third role is to deal "with outbreaks of limited war should they occur." These two latter missions have no explicit counterparts in U. S. strategy; in particular, there seems to be divergence with respect to the limited war mission. The priorities of these strategic missions are as remark-

able as their definitions, especially as the overall strategy is designed to make a contribution "commensurate" with British "standing as a world power." The British armed forces are expected merely to "contribute" or "play a part"; their most ambitious role is to be in the area of limited war, but even there they should deal only with the "outbreak" of such conflicts. It is hard to believe that experienced soldiers fail to realize that a strategy which is so much imbued by supercaution, super-economy and defeatism can never be made to work effectively. Nor are these assignments "commensurate" with British "world power" standing: they clearly imply that the UK is content to lean upon American power. Are the British military denying to themselves the right of free speech? Why does *Brassey's* not speak up?

Avant-Garde with BAR

THE LAST PARALLEL
By Martin Russ
Rinehart & Company, 1956
333 Pages; $3.95

Reviewed by
COL. S. LEGREE

This is a most irritating, thoroughly readable, and exceptionally valuable how-I-won-the-war book. If this is what it purports to be, a true diary as Sergeant Russ wrote it during the later phases of the Korean conflict, and is not the product of too many afterthoughts and too much editing by well-meaning civilians, every officer or noncommissioned officer who expects to command men in battle should read it thoroughly and place it on the shelf next to Charles MacDonald's *Company Commander*.

Russ was the type of soldier (actually a marine) who is the bane of the junior officer's existence. Young, exceptionally well educated, unconventional, either a budding intellectual or pseudo intellectual, you could cross him off your list as a smart-aleck punk except that he was a superior fighting man and was bucking for three stripes. He made sergeant at twenty-two—on merit.

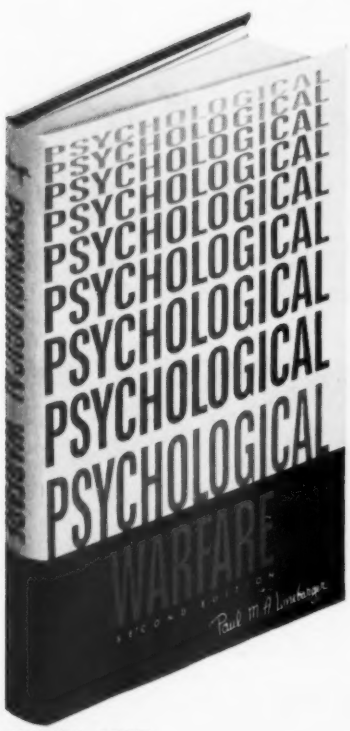
The author's contempt for most officers was second only to his contempt for the Army. Marine boot camp and his later training convinced him that the Army was even worse than the Marines, and that very few people above the grade of sergeant, and none above the rank of captain, knew much about much. His writing style made the reviewer want to reach for the hairbrush and the seat of the author's britches, but there was nothing wrong with his fighting style. As an imitator of James Joyce he leaves something to be desired, but if you were the CO of a front-line infantry company, you'd be glad to have him around.

Russ applied his intelligence to the problem at hand—patrols and killing Chinese. Not content with taking his share of this usually unpopular activity, he organized a small group of expert patrollers and was out almost every night. Far from fearless, he recognized the risks and took them anyhow because "he was trying to prove something or other"—what, he was not quite sure. Meanwhile, in his diary he was prone to note such things as a senior officer's "good-guy conversation," the apparently superior training of the Chinese soldier, and the fact that only Army men ever spoke of "Reds" or "Commies."

It is news to this reviewer that the Marines were the first to adopt the M1, that the '03 weighs six pounds, and that a regiment back of the line is in regimental reserve, to note just a few things that indicate the young man's inexperience. But note this well: in future combat, we're going to have more men like Russ, and if we can swallow our "Old Army" aversion, they're going to be first-class fighting men.

PSYCHOLOGICAL WARFARE

By Lt. Col. Paul M. A. Linebarger, USAR



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CHICAGO. Luncheon at which a Cook County Chapter of AUSA was born. Second from left is Lt. Gen. William H. Arnold, CG, Fifth Army. Others are members of Fifth Army headquarters and retired and reserve officers living in the Chicago area.

MIAMI, FLA. AUSA medal is awarded University of Miami Cadet Wayne J. Halpern by Col. Francis J. Goatley.

AUSA on the March

SAN FRANCISCO. Temporary chairman of the San Francisco Chapter of AUSA is Mr. Frank E. Marsh (seated). Behind him are Lt. Gen. Robert N. Young, CG, Sixth Army, Judge C. J. Goodell and Mr. Gene Bennett.

ALBUQUERQUE, N. M. Mrs. Sadie M. Lane, civilian employee of the New Mexico Military District, and Maj. O. W. Callis leaf through the December 1956 copy of ARMY. Mrs. Lane is another distaff member of the AUSA.

FORT BELVOIR, VA. 2d Lt. Siegfried L. Graebner receives AUSA medal from Col. Charles H. Waters for graduating as top man in his class at The Engineer School.

FORT CARSON, COLO. First Sergeant Thomas Kivlehan signs up members of Co. G, 39th Infantry, for AUSA. It's the first Fort Carson outfit to have all officers and noncommissioned officers members of AUSA. Commanding Officer is Capt. Edward L. King.

FORT HOOD, TEXAS. Members of the Killeen Chamber of Commerce who visited at Fort Hood to hear a briefing on an atomic exercise all joined the AUSA. Col. Bradford Butler (see page 27) briefs the group, which includes Maj. Gen. W. N. Gillmore, III Corps commander.

Catch 'em young

(Continued from Cover II)

chapter of the Association. The Executive Council was one jump ahead. It had already been thinking about it but had not worked out all the details. Committees of Executive Council members and ROTC cadets were formed quickly to work out a suitable procedure to form student companies. Major General Harry McK. Roper and his Committee on Reorganization held many meetings hammering out regulations. The Secretary of the Association fell heir to the problems involved in implementing the Council's decisions. Lieutenant General Walter L. Weible, then Association President, lent his active support to the company from the start. And lastly, the cadets at Penn State worked long and hard to solve current problems and prepare solutions for future ones. The main hurdle was jumped on 9 August 1956 when the Executive Council approved the regulations for ROTC companies. This action legalized the Penn State Company which had been in operation for many months. It made the cadet company the first in the nation.

But why establish ROTC companies? Of what value are they to AUSA? What has AUSA to offer the cadets? The answers to these questions support our conviction that ROTC companies have ushered in a new era. Let's list a few pertinent facts relative to the ROTC program which are directly concerned with the over-all AUSA objectives:

(1) The ROTC today is the source of a large share of our active-duty officer strength.

(2) Many nongraduates of the ROTC program (those who take the first two years and then drop out) become noncommissioned officers.

(3) There are more Regular Army officers commissioned each year from the ROTC than from the Military Academy.

(4) Under the current General Military Science Program in effect in 80 per cent of the Army colleges and universities, cadets do not specialize in any branch of service but follow a course of instruction in basic military subjects.

(5) Cadets apply for a branch of their choice during their senior year in college.

SINCE the ROTC program clearly provides the bulk of both our Reserve and Regular officers, the Army should do everything in its power to further the military knowledge of these future leaders while they are still in college. Every possible source of information should be available to cadets to help them gain a better understanding of the military life, its responsibilities and its privileges. While every ROTC detachment has a library of military literature, how many cadets read service publications? Not very many, I can assure you. Many who do glance through them have no background on which to base their reading and so understand little of what they read. If a cadet receives a copy of *ARMY* each month—and all cadets belonging to AUSA do—he will read it, if for no other reason than the fact that it is the magazine of *his* society. Exposure to things like the Pentomic division, a new tank, a new gun, an atomic tactical concept, a Civil War analogy, all written in clear, nontechnical language that he can understand, will begin thought-provoking ideas. The main point is that he will *read* professional material written by professionals for professionals. If we were to accomplish no other purpose than exciting professional interest and curiosity in ROTC cadets, we would gain a substantial objective. But there are many other factors involved.

How many of us were confused and reluctant when we first reported for duty? The Army was a new and strange experience. Through the instrument of the ROTC companies of AUSA we can form a link between the cadet and the Army when he is only a sophomore or junior in college. The link can continue indefinitely, on duty, off duty, or retired. No other society can offer this relationship for all Army personnel. The link works both ways. It will help the cadet feel more at home when he enters active duty since he will have already been indoctrinated in Association affairs for two or three years and will be familiar with many of the problems and people that he will encounter on active duty. The Army can profit in giving the cadet a clear picture of its operation. It can dispel ignorance and clear the way for untold numbers of young men to make a reasoned, educated decision on an RA career. I can see no reason why with these contacts, Regular Army applications should not far exceed the number that can be accepted. Here we make an ROTC cadet feel that he is a valued member of our Army long before he reports for his first duty day.

A CERTAIN number of newly commissioned officers will not remain on active duty. What about these men? If we have given these cadets a solid foundation for even a short period of active duty, and keep them interested in the future of the Army, we will have a large and influential group of citizen soldiers spread in almost every field of endeavor. They can aid immeasurably in accomplishing AUSA's aim of keeping the civilian population alert to the importance of the Army's role in national security.

The cadet companies will be active in interesting more young men in going to college and taking Army ROTC. They will also be active in convincing more basic ROTC students to enter the advanced program.

The Regular Army will be receiving many benefits too. If each student company conducts live, energetic programs and lives up to its charter, we will give every student a better picture of what the Army really is and how he fits into it. Once this has been accomplished, it can be expected that greater numbers will be applying for commissions. This will permit the Army a greater range of selectivity.

ONLY one thing can prevent ROTC companies from wide expansion. If every ROTC detachment doesn't get behind the formation of companies we have lost the chance to break loose. Each officer and enlisted man assigned to an ROTC unit must be a zealous convert. He cannot help but see how AUSA can help on his campus. When requests from ROTC companies come to the desk of a post commander or some other agency head, don't think of the request as a bothersome detail that should be denied. Think of it rather as an opportunity to sell the innumerable good points about Army life to some young college student who is still in his formative years. Help him to a logical decision. Give him a sound appreciation of the military as a career. Industry has been doing this for years to get the best of new blood. If we provide every possible aid to these young men *before* they become officers, the first commander who gets them can thank us for a bonus benefit.

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Aims and Objectives

The Association of the U. S. Army shall be an organization wherein all who are in accord with its objectives may join in the exchange of ideas and information on military matters, and in fostering, supporting, and advocating the legitimate and proper role of the Army of the United States and of all its elements, branches, and components and providing for and assuring the Nation's military security.

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Cadet Membership. Cadet membership in the Association shall be open to the cadets of the United States Military Academy and to all current enrollees in Junior, Military Schools, and Senior Divisions of the Army ROTC Program, including those units provided for by Section 55c of the National Defense Act as amended.

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Sustaining Membership. Sustaining membership shall be open to such industrial, commercial, business, professional, technical and veteran firms, corporations, organizations or societies that wish to support the aims and purposes of the Association, subject to specific approval by the Council of Trustees.

Address all communications to THE SECRETARY, 1529 Eighteenth Street, Northwest, Washington 6, D. C.

Report from your AUSA CP

Council of Trustees meeting 28 January was actually first full business meeting of Association's top governing body. Long agenda required practically entire day to complete.

Council approved following chapters for charter: Detroit, Wolters, Camp Irwin, Lawton-Fort Sill, Albuquerque, Frankford Arsenal, Mother Lode (Sacramento, Calif.). Indications of many more in future. This program is really rolling.

Restriction against formation of chapter in Washington, D. C., was removed from Chapter Regulations.

Upon request of some members, Council considered removal of restriction on voting by Associate members. Consensus was that no action would be taken this meeting; subject is to be reconsidered after more experience of effects on quantity, quality of membership.

Executive Vice President was instructed to prepare charter for Committee on Army Memorial and make recommendations as to membership of Committee, with proviso that Chairman be member of the Council.

Long discussion centered around Association position on current defense matters. Report to membership and to chapters on this subject will be disseminated when full agreement is reached.

With final approval by Council of Trustees, staff is moving ahead to install punch-card membership and subscription operation. Now seven weeks behind in processing applications, staff believes April issue will be first mailed under new system, backlog will be under control late in April, all significant bugs worked out of procedures by June. Present manual system has bogged down from sheer quantity of new memberships and requirements for additional information for Chapter use. Meanwhile we urge patience if the service is not all it should be. It is heartening to see how all of you are participating in our new membership program. But don't forget, we want renewals also.

"I work for the Army; the more I know about it the better job I can do." The speaker: Mrs. Sadie M. Lane, civilian employee of U.S. Army Military District of New Mexico, as she signed up for Association membership. We believe Mrs. Lane is first of her sex in New Mexico to join Association. Major W. O. Callis, District Adjutant, enrolled Mrs. Lane.

We have recently seen a copy of a letter from a strong supporter of the Army which reads in part as follows: "To my way of thinking, this Association can do a great deal of good for our Country and the United States Army. But it had better be forceful and not loaded up with what we term "prominent citizenry" who are only willing to attend cocktail parties and banquets and bask in the warmth of flashbulbs . . . if so, it will fall flat on its face and not serve a good purpose. It has to be active, vigilant, forthright and ready and willing to 'stand up and be counted' without any hesitancy or reservation, and its members should preach the gospel of the United States Army." It seems to us that this gentleman has expressed in very forceful terms the requirements for the membership and activities of our local chapters.

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